MENTAL RETARDATION
ABSTRACTS

VOL. 6, NO. 3

JULY-SEPTEMBER 1969

U. S. Department of Health, Education, and Welfare
Social and Rehabilitation Service
Rehabilitation Services Administration
Division of Mental Retardation
Washington, D. C. 20201

Mental Retardation Abstracts is a quarterly publication of the Division of Mental Retardation, Rehabilitation Services Administration. It is a specialized information service designed to assist the Division in meeting its oblication to plan, direct and coordinate a comprehensive nationwide program for those with mental retardation and related handicaps. Specifically, this service is intended to meet the needs of investigators and other workers in the field of mental retardation for rapid and comprehensive information about new developments and research results and to foster maximum utilization of these results.

Mental Retardation Abstracts is prepared under contract with the American Association for Mental Deficiency.

Communication concerning the abstracts (except orders to the Superintendent of Documents) should be addressed to:

Mental Retardation Abstracts
Division of Mental Retardation
Rehabilitation Services Administration
Washington, D. C. 20201

Use of funds for printing this publication approved by the Director of the Bureau of the Budget, April 29, 1968.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Subscription price per year in the United States, Canada, and Mexico, $3.00; other countries, $3.75. Single copies, $1.00. Persons wishing to purchase single copies or subscriptions should send their orders directly to the Superintendent of Documents accompanied by check or money order.

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For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 - Price $1 (single copy).
Subscription Price: $3; 75 cents additional for foreign mailing

1049 LELAND, HENRY. Mental retardation tomorrow (symposium). *Project News of the Parsons State Hospital and Training Center*, 4(7):2-10, 1968.

The need to change the residential institution's role and nature, attitudes regarding the role of intelligence and behavior, and the processes of child-rearing is a challenge for the future for workers in the field of MR. If institutions were reduced in size and reorganized around specific problem areas, they could become teaching residential facilities rather than general care centers; their emphasis would be returning the individual to the community. For those children with specific difficulties who remain in the community, it matters little what their intelligence level is--their problem must be treated. Appropriate continuum of services for the treatment of these problems must be provided. The place to attack these difficulties is at the infant or preschool level. The major emphasis must be on the needs of all children with special attention given to those who fail to respond appropriately. (No refs.)
A. Huffer.

1050 STEVENS, HARVEY A., & HEBER, RICK. An international review of developments in mental retardation. *Mental Retardation (AAMD)*, 6(2):4-23, 1968.

Fourteen countries representing all continents have issued status reports which review the services and programs and relate some of the obstacles to progress in the field of MR. Personal correspondence was exchanged with 31 experts in the respective countries. Questionnaires were completed on problems of concept and prevalence, residential and hospital facilites, educational services, rehabilitation and employment services, medical diagnosis and treatment, prevention, research, personnel, parents, and non-governmental organizations, and the results were summarized for each category. There was a consensus on the need to standardize terminology and criteria and to define MR. Reliable data on the prevalence of MR was scarce. Few services are available in developing countries; however, plans are being formulated. A scarcity of finances and personnel are the major causes for the lack of good residential hospital facilities. Most countries have educational services to educate or train all levels of MRs through government or private means. Rehabilitation and employment services are designed to prepare the MR for productive work and to extend sheltered services. The character, culture, and economics of a country reflect the degree of medical and diagnostic services. Limited finances inhibit prevention programs; however, PKU detection is usually practiced because it is easily recognized and inexpensive to prevent. The need for disseminating research findings is stressed in the hope that application of the findings would eliminate or minimize the effects of MR. The need for more and better trained personnel who utilize the multi-discipline approach is recognized by all the countries. A correlation exists between the strength of parent groups and the degree of interest of governments in providing programs for the MR. (No refs.) - *G. Trakas.*

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1051 KAGIN, EDWIN F. Adaptive behavior and mental retardation during the renaissance and reformation. *Project News of the Parsons State Hospital Training Center,* 4(9): 2-5, 1968.

During the renaisance and reformation, MR individuals were frequently referred to as idiots, dunces, fools, dullards, and dolts; however, the real definitions were social ones related to the individual's adaptive behavior. Frequently, MRs were grouped inappropriately with the mentally ill and treated the same as the insane; many came to be regarded as witches, warlocks, or possessed of the devil. Mentally handicapped persons were persecuted and often beaten. The first European asylum devoted solely to mental problems was constructed in Spain in 1408 by Gilaberto. None of the early hospitals made a distinction between the mentally ill and the MR; treatment was practically nonexistent. Ambrose Pare vacillated between 2 schools of thought: the humanistic view that all persons could change; and the idea that there were strong forces beyond the understanding and control of man. Other clinicians began making realistic observations on mental disorders; many believed that mental disorders and epilepsy were physical in origin. Juan Vives was astounded by the violent abuse of the mentally ill and retarded and felt that these individuals should receive medical care and attention. Johann Weyer was the first physician in history to insist that he had the right to treat his mental patients as sick persons. Many other humanists during the Renaissance began to be less rigid in their handling of MR individuals and believed that retardates could modify their condition through adaptive behavior. Eventually, a scientific methodology was developed and superstition and dogma became things of the past. (5 refs.) - *S. Half.*

1052 RIEMER, DELILAH. Mental retardation programs in Israel. *Mental Retardation (AAMD),* 6(2):26-28, 1968.

Israel is meeting the needs of the MR through government, private, and volunteer organizations which include evaluation centers, sheltered workshops, and schools. School programs include the preschool elementary MR, but emphasize vocational training for adolescent TMRs, especially the performance of agricultural tasks where there is a demand for more workers. Assessment centers stress prevention techniques and work with adolescents and their families. The staff at these centers usually includes a physician, a social worker, occupational and speech therapists, teachers, and vocational instructors. Private institutions care for approximately 1/3 the patient population in Israel and private services parallel government services. The government supported institutions are better staffed with a staff-to-patient ratio of 1:2.8 and have newer buildings and better equipment. Sheltered workshops are sponsored by both government and private organizations; the guiding principle of all institutions for the MR in Israel is that each MR who can be rehabilitated to become self-supporting is an asset to the country. (No refs.) *M. Drosman.*

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1053 VAN PELT, J. D. Suggestions for a national association in Australia. *Australian Children Limited,* 3(4):121-126, 1968.

A suggestion is made that a strong national association for the MR replace the loosely organized, low-budget Australian Council for the MR (ACMR). Characteristics for a national organization include: existence of local "grass roots" branches with each unit having a democratic vote at annual meetings; establishment of local autonomy; and possession of a homogeneity of purpose. The assistance of the ACMR is elicited in the establishment of a strong national organization for the MR in Australia. (No refs.) - *M. L. Wiltshire.*

No address

1054 INTERNATIONAL LEAGUE OF SOCIETIES FOR THE MENTALLY HANDICAPPED. *Development of National Voluntary Organisations for the Mentally Handicapped:* Symposium held at Strasbourg, France, May 22-24, 1967, 31 p. $0.75. (Available from National Society for Mentally Handicapped Children, 86 Newman Street, London, W. 1, England.)

Representatives from England, Finland, Germany, Holland, Israel, Italy, Scotland,

Sweden, Switzerland, and Yugoslavia investigated common lines of action which can be used to facilitate the rapid and successful development of national societies for the MR. Because of the rapid growth in the problem of the MR child, there is an urgent need for expanded services and for the development of experts in the new, specialized discipline of "retardation." Every country needs a voluntary organization which will: extend public awareness of the problem of MR; provide opportunities for association and joint action by parents and families of MRs; demonstrate and experiment with the most modern techniques in psychology, education, and other disciplines which have a contribution to make in the field of MR; and ensure the development of adequate facilities for the MR by applying appropriate pressures on local and central governments. The problem of MR should become an increasingly important part of the educational and social services in these countries and should be dealt with by the fields of education, psychology, sociology, and medicine. (No refs.) - *J. K. Wyatt.*

1055 KIRKLAND, MARGARET. Relationship of mental retardation programs to UCPA. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 70-75.

The development of new resources is important, but the effective use of resources that are presently available is even more important in providing better services for the beneficiaries of the Social and Rehabilitation Service. Funds allocated to the various institutions are now directed to basic functions, such as training of child care staff. Grants can be used to provide parents with information on guiding, teaching, and caring for their children. Grants for a university associated program can provide increasing interdisciplinary understanding with each practitioner becoming acquainted with the capabilities of other practitioners. Community facility construction and staffing programs are other facets of the work of the Social and Rehabilitation Service. Present resources can be more efficiently used through cooperation between the mental retardation agencies and the United Cerebral Palsy Association. Terminology must be universally defined and accepted before cooperation between agencies can be maximized. Program standards must be adopted. Requests for new funding will be approved more frequently if it is demonstrated that the receiving agencies will use present resources more efficiently. (No refs) - *M. T. Lender.*

1056 A review of the dental services programs for the handicapped. *Programs for the Handicapped,* Newsletter of the U. S. Health, Education, and Welfare Department, 68(2):1-10, 1968.

Many dental problems exist in handicapped children which often receive very little attention; dental research, training, and patient services are now supported by the Social and Rehabilitation Service. Matching grants are available to states through the Children's Bureau. The 1967 Federal allotment of $6,450,000 (Federal Maternal and Child Health and Crippled Children funds) represents an increase of 9% over the previous year's allotment for dental services. In 1967, 12 universities were provided with about $358,000 for training and demonstration and $4,000,000 for dental services. Centers for maxillofacial prosthetics for western New York, southern New York, Chicago, and Houston are planned. The Division of Mental Retardation has demonstration and training programs in Houston, Texas, Northville, Michigan, New Hyde Park, New York, and Helena, Montana, which provide training in management of dental disorders, parent education, and/or methods seminars. Funds are also provided for the training of graduate dentists, teachers, clinicians, and dental students to treat chronically ill and handicapped patients. Intra-mural research by the National Institute of Dental Research on fluoride gel topical application, may reveal a potential value of this method for persons who cannot manipulate a toothbrush. Other research has been involved with a topical antibiotic paste which may reduce the dental plaque that forms in persons fed by stomach tube. (12-item bibliog.) - *M. T. Lender.*

1057 DYBWAD, GUNNAR. The architect and the mentally retarded child. *Mental Retardation (Canadian ARC),* 18(2):2-10, 1968.

Although many changes have occurred in the field of MR in the past 20 years and new methods of education and rehabilitation have been developed, the architectural design of many institutions interferes with rehabilitation. Uniform building patterns should not

be developed because of the diversity of MR; however, some general points require attention. There is a need for a variety of institutions to provide for the wide range of differences between retardates; the emphasis of the structure should be to provide an environment conducive to physical development, learning, and social and vocational training; the environment should provide meaningful living space to combat depersonalization; a new type of residence to which the MR can relate himself meaningfully is needed; individual living space is needed to provide privacy; the environment should provide a wide variety of stimuli to enhance learning at all levels of development; the architecture should be adapted to provide for the needs of a wide variety of emotionally and physically handicapped MRs; when considering finances, the cost should be related to the major purpose of the institution; and since environment is an important variable in rehabilitation, the architect should be a member of the team. Architecture should be considered as a major profession involved in the solving of problems of MR. (No refs.) - *E. R. Bozymeki.*

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1058 Five small clinics. *Architectural Record,* 144(2):117-122, 1968.

Illustrations and diagrams of 5 clinics are provided to indicate how architects utilize essential programing aspects in designing buildings. The innovative designs include a glass-enclosed central area for visual control of the surrounding rooms and appropriately placed parking areas to accommodate the high turnover rate in traffic. (No refs.) *A. Huffer.*

1059 BERTNESS, HENRY. Facilitation of special education programming through architecture. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968. p. 3-6.

The Tacoma, Washington, Public School System is developing facilities for handicapped children which are integrated with the general school system. The handicapped child is considered first as a child and second as handicapped, and all parts of the school are available for his use, as well as special and supplementary facilities. These children are progressively included in regular school activities. The Tacoma school system has developed the idea that architecture of the special education facility should be integrative in design with handicapped children to be included in the milieu of all children. (No refs.) - *M. T. Lender.*

1060 CARTER, CHARLES H. *Handbook of Mental Retardation Syndromes.* Springfield, Illinois, Charles C. Thomas, 1966, 168 p. $8.00.

The basic causes of MR are either inadequate normal brain tissue formation or extensive destruction of existing brain tissue. Either disorder will prevent a person from functioning at a so-called normal level. By itself, MR does not represent a syndrome; it is a symptom of a large number of medical syndromes. MR is not curable and the ultimate solution of MR lies in prevention. Training and education may enable the MR to attain a higher functional IQ and to function at a productive and acceptable level; however, training and education do not change innate functional ability, and science has not yet discovered a way to return an MR to a state of normal functioning. In the last 15 years, many of the syndromes which include MR as a symptom have responded to research; new training, rehabilitation, and education techniques have been developed; a better understanding of MR has been realized; and there has been a remarkable reduction in MR. This discussion of the medical aspects of MR includes descriptions of the most important organic etiologies that produce MR and should be of interest to psychologists, psychiatrists, educators, social workers, physicians, and parents of MRs. (No refs.) - *J. K. Wyatt.*

CONTENTS: Problems of the Study of Mental Retardation; Mental Retardation Due to Infections, Prenatal, Postnatal; Mental Retardation Associated with Prenatal Intoxication and Allergic Reactions; Mental Retardation Second to Prenatal Trauma, Physical Agents, or Intoxication; Mental Retardation Due to Injury at Birth (Paranatal Brain Damage); Mental Retardation Associated with Postnatal Poisons and Allergic Reactions; Mental Retardation Associated with Toxins, Endotoxins, and Deficiencies in the Postnatal Period; Mental Retardation Due to Postnatal Injuries, Vascular Accidents, and Anoxia; Mental Retardation Associated with Abnormalities of Lipid

Metabolism; Mental Retardation Due to Abnormalities of Amino-Acid Metabolism; Mental Retardation Due to Abnormalities of Calcium Metabolism; Mental Retardation Due to Abnormalities of Carbohydrate Metabolism; Mental Retardation Associated with Abnormalities of Endocrine Function; Mental Retardation Associated with Miscellaneous Metabolic Abnormalities; Mental Retardation Associated with Diseases and Conditions Due to New Growths and Skin Lesions; Mental Retardation Associated with Cranial Abnormalities and Prenatal Influences Other Than Infections, Infestations, Intoxications, or Allergies; Mental Retardation Due to Chromosomal or Genetic Causes; Mental Retardation Associated with Unknown or Uncertain Causes; Mental Retardation Due to Functional Causes; Types of Care for the Mentally Retarded; Conditions Responding to Therapy or Prevention; Screening Tests Available in Diagnosis of Mental Retardation Syndromes.

1061 VAN OUDENHOVEN, N. J. A. Omschrijving van zwakzinnigheid (Definition of feeble-mindedness). *Tijdschrift voor Zwakzinnigheid en Zwakzinnigenzorg*, 5(3):81-87, 1968.

Eight criteria are discussed in relation to the definition of mental deficiency. These are: developmental, constitutional, irreversible, adult, intellectual, social, educational, and personality. These categories can be rearranged to include most of the existing types of MR. (40 refs.) *M. Drosman.*

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1062 LUND, HELEN MARIE, & KAUFMAN, MELVIN E. The matrifocal family and its relationship to mental retardation. *Journal of Mental Subnormality*, 14(27, Part 2):80-83, 1968.

Research focusing upon the attitudinal and behavioral aspects of pregnancy with emphasis on its relationship to mortality and morbidity in infants is being conducted at Grady Memorial Hospital in Atlanta, Georgia. Tentative conclusions indicate that the complex psychosocial factors associated with the matrifocal family contribute significantly to the development of certain forms of MR. Information obtained in the hospital data indicate that 80% of the obstetric cases were Negro with 25% being primigravid; 90% of the primigravid group had conceived illegitimately; 17% of the births in the primigravid group were premature and 60% of the Negro births were by women 16 years or younger; and there was a high incidence of failure by this group to get medical care prior to birth. Tentative conclusions regarding the relationship between matrifocal family structure and the incidence of MR are: very poor Negro women tend to live in matrifocal families which support or do not disapprove of early pregnancy; inadequate parental control permits young girls to become involved in premarital pregnancy; delay in using medical services is associated with lack of sanctions against early pregnancy; early pregnancy and delay in using medical services is related to reproductive waste including MR; and therefore, the matrifocal family contributes to a higher incidence of MR. (6 refs.) - *G. M. Nunn.*

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1063 DOYLE, PATRICK J., & KENDRICK, MARGARET. Medical rehabilitation of the retarded child: Some representative principles in management. *Clinical Pediatrics*, 7(3):157-164, 1968.

A rehabilitation program for MR requires accurate diagnosis and medical rehabilitation and management. The diagnosis is reached by obtaining a complete medical genealogy, a physical examination including an assessment of the child's developmental rate and a complete neurological examination, specialized tests, a battery of psychological tests, and differential diagnosis of MR from other abnormalities with similar signs and symptoms. Medical management may include psychotropic medication, surgical treatment, psychiatric treatment, and dental care. Rehabilitation management starts after objectives and expectations have been discussed with the parents. Game activities should develop into daily work routines with short-term achievable goals. Training in sitting, standing, and walking needs special equipment. Activities for daily living skills need to be initiated at home and at out-patient clinics. An exercise program should include stretching, strengthening, endurance, coordination, and posture activities and afterwards recreational activities should be introduced. (11 refs.) *G. M. Nunn.*

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1064 BIJOU, SIDNEY W. The mentally retarded child. *Psychology Today*, 2(1):47-51, 1968.

MR is currently viewed not as a symptom but as a form of behavior resulting from conditions that prevent, reduce, or delay development of effective ways of interacting with the social, cultural, physical, and biological environment. The quantity and quality of opportunities for the MR to develop socially, physically, and biologically are delayed and the advantage of contacts he makes in these areas are unsubstantial. Factors contributing to the delays and/or failures in development involve anatomy and physiology, reinforcement and discrimination, reinforcement of undesirable behavior, and severe aversive stimulation. Impairment to the physique of the child will always cause a limited behavioral repertory and developmental retardation. Limited opportunities for reinforcement and discrimination in the areas of developing complex motor and verbal behavior may produce insufficient social repertories. Severe aversive stimulation may halt or suppress ongoing behavior, may change previously neutral or positive situations to distasteful ones, and may evoke aversive physiological responses thereby reducing the child's potential for serviceable interactions. (No refs.) *G. Trakas.*

No address

1065 KIRMAN, BRIAN. Mentally handicapped persons. *British Medical Journal*, 4(5632):687-690, 1968.

The incidence of mental handicaps may be as much as 3% of the total population, but the distinction between handicapped and non-handicapped is not absolute. The legal terms used to describe mental defectives may be further clarified by using an IQ range. Mortality increases with the severity of the handicap in children, is greatest at birth and shortly thereafter, and decreases significantly until 7 years of age. Shortened lives are characteristic of some handicap conditions. The growth and development of handicapped children is slower than that of normal children, but is enhanced with good care at home or in an adequately staffed institution. Most conditions of handicap are static, but some progressively become worse; therefore, early and accurate diagnosis is important. The parents of handicapped children need reassurance and education. Genetic advice to parents should be considered carefully by the physician. Case reports illustrate that overprotection and confinement can impair the progress or adaptation of handicapped children. (10 refs.) - *M. T. Lender.*

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1066 INNES, G., *KIDD, CECIL, & ROSS, H. S. Mental subnormality in North-East Scotland. *British Journal of Psychiatry*, 114 (506):35-41, 1968.

A survey in North-East Scotland in 1966 revealed 2,887 known MRs. The survey included children and adults who were known to agencies dealing with the MR. Ninety-three percent of all patients were unmarried, prevalence of MR in both sexes was low among the preschool group and in those over 30 years old; peak prevalence was in the 15- to 19-year-old group. Emphasis was placed on a family history of abnormalities, social factors, diagnosis, and geographical area of origin. Comparison studies were made and 8.4% of the retarded population was diagnosed as having mongolism. Follow-up care, proper supervision, and adequate treatment were provided for the mentally deficient. (13 refs.) - *S. Half.*

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1067 ROBOZ, P., & PITT, D. Studies on 782 cases of mental deficiency. *Australian Paediatric Journal*, 4(2):79-95, 1968.

Mental deficiency may be related to prenatal or postnatal infections, various types of intoxication, or other factors, as demonstrated by 782 patients in the Children's Cottages, Kew, Australia, who were studied for a 12-month period, June 1961-June 1962. Comparison was aided by calculation of combinations and incidences of malformations. One-third of the patients had motor disorders. The behavior exhibited included dependency, unresponsiveness, cooperativeness, aggresiveness, destructiveness, hyperactivity, shyness, autism, and psychopathy. Clinical histories were reconstructed if possible; those unable to be reconstructed were termed unclassified. Patients were examined at least once, including the administration of psychological tests. The patients were divided into severely, moderately, and mildly retarded groups. The classification approved in 1959 by the

American Association on Mental Deficiency was utilized with slight changes. Five cases of MR from congenital rubella and 3 cases from congenital toxoplasmosis were discovered. Thirty-one males and 7 females were MR because of postnatal inflammatory diseases; 14 patients were MR because of neonatal intoxication. The remainder of the patients were classified into 30 subcategories, which reflected the etiology of the deficiency. (60 refs.) - *M. Lender.*

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1068 THIEFFRY, S., GOUX, C., & BINY, Y. Resultats preliminaires d'une enquete sur l'arrieration profonde, a partir des consultations hospitalieres specialisees du C.E.S.A.P. (d'apres 535 observations) (Preliminary results of a survey on severe mental retardation from specialized hospital consultations by C.E.S.A.P. [535 observations]). *La Medecine Infantile,* 75(4):281-288, 1968.

A survey was taken on 535 patients (IQ, 0-50; CA, 0-16) in order to understand genetic and environmental factors which operate in MR. Fifty-six percent of the patients were boys, 44% were girls. A questionnaire was completed by a doctor, a social worker, a psychologist, a teacher, and a physical therapist. It was determined that 8% of the Ss' fathers worked in agriculture, 9% were craftsmen, 9.5% were professionals or in industry, and significantly, 54.5% of the fathers were laborers. Four and one-half percent of the patients came from families where inbreeding occurred. There was no significant correlation between MR and the number of siblings in the family. Causal factors in 18% of the Ss could not be determined; however, 17.5% of the children were more than 1 month premature, while 22% showed anoxia at birth, 11% were forceps deliveries, 10% were born after prolonged labor, and 55% of the patients had shown complications at birth or shortly thereafter. Of 388 children studied for clinical symptoms, 23% manifested MR only; 49% had neurological problems; and 40% had behavior problems. (No refs.) - *M. Lender.*

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1069 FREYTAG, ELLA, & LINDENBERG, RICHARD. Neuropathologic findings in patients of a hospital for the mentally deficient: A survey of 359 cases. *Johns Hopkins Medical Journal,* 121(6):379-392, 1967.

Neuropathologic data were analyzed in postmortem examinations of 359 MR patients to determine the frequency and type of "pathologic conditions." Ss consisted of 214 males and 145 females whose CAs ranged from below 1 year to 89 years at time of death. All patients had been residents of the Rosewood State Hospital in Maryland. Results indicated that 83% of the MRs had morphologic disorders. Data also showed that developmental disorders with inclusion of hydrocephalus were the most frequent alteration with the next group consisting of those patients having brain damage from circulatory lesions. Eighty of 83 cases were cited as having circulatory lesions from other conditions than organic obstruction of arteries and veins. Analysis of brain lesions showed that 50% were present at birth, 16% were due to birth process, 24% occurred after birth from various conditions, and 10% could not be determined in terms of para or postnatal causes. Brain damage as a result of mechanical injury at birth was found only 5 times in this survey. Mongolism accounted for 31 cases with 8 having had congenital heart disease. Mongoloids without heart complications died at a mean CA of 26 years. Meningitis was involved in 18 cases and storage diseases were present in 8 additional patients. Only 3 MRs had demyelinating disease while tumors were found in 6 other retardates. Four patients had tuberous sclerosis and were 16-19 years old at death. There were 2 spastic epileptics, 1 woman with Huntington's chorea, and 4 cases had lesions which remained unclassified. In 62 of the patients, there were no "pathologic alterations either grossly or histologically"; however, in 7 of these the etiology of MR was determined clinically--5 were cretins and 2 were PKU. (3 refs.) - *B. Bradley.*

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1070 TEMPLE, SIMON. When your background does not help. *Journal of the Scottish Society for Mentally Handicapped Children,* 3(2):14-15, 1968.

The knowledge of environmental effects on a child's personality and his ability to communicate is fundamental in understanding the educationally subnormal child. Although further research in this area is important, enough is already known for parents, schools,

and communities to focus their efforts on enriching the MR child's environment in music, art, drama, movement, and other activities directed towards developing the senses. (No refs.) - *M. L. Wiltshire.*

No address

1071 GOLDING, A. M. B. Ascertainment of subnormality in Bedfordshire. *Journal of Mental Deficiency Research,* 12(1):81-83, 1968.

The incidence of mentally subnormal children is analyzed for the county of Bedford in England. Mental subnormality, as defined by this study, included children known to the local health authority and accepted by families as uneducable as well as children in a hospital for the subnormal. Children in private hospitals were excluded from this analysis, and those children born after 1961 were not involved in the primary analysis due to incomplete records. The population of mongoloids was determined as 1.0/1,000 children in the CA group examined (4 1/2 to 13 1/2 yrs in July 1966). The occurrence of subnormality (2.6/1,000) is comparable with the Middlesex survey figures. Only 2 mongoloids resided in hospitals while 60% of non-mongoloid children were residing at home. It is suggested that this community is located in a semi-rural environment and that these figures may not be representative for the entire country. (3 refs.) - *B. Bradley.*

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1072 HENDERSON, PETER. Changing pattern of disease and disability in school-children in England and Wales. *British Medical Journal,* 2(5601):329-334, 1968.

During the past 50 years, there has been marked improvement in the health of British school children when compared with the slowly developing countries of Asia and Africa where there is still widespread disease and malnutrition. In England and Wales, the 4 most common physical disabilities are cerebral palsy, spina bifida, congenital heart defects, and muscular dystrophy. These children often have multiple handicaps such as hearing defects, visual limitations, and severe speech and language disorders. Hemophilic children are the smallest group of the physically handicapped. Children with diabetes are usually able to attend ordinary schools. Special schools are provided for epileptics, many of whom are MR or are emotionally disturbed. These conditions require medical, social, and educational cooperation; they also need the politician to aid in securing governmental support. (20 refs.) - *M. L. Wiltshire.*

No address

1073 CHEN, KWANG-MING, BRODY, JACOB A., & *KURLAND, LEONARD T. Patterns of neurologic diseases on Guam: I. Epidemiologic aspects. *Archives of Neurology,* 19(6):573-578, 1968.

Higher incidences of convulsive disorders, myotonic dystrophy, peroneal muscular atrophy, and hereditary ataxias were noted in 1,028 Chamorro patients when compared with other populations. From 1960 to 1966, all patients in Guam suspected of having neurological disease were referred to the National Institute of Neurological Diseases and Blindness (NINDB) Research Center through the cooperative efforts of the U. S. Naval Hospital, Guam Memorial Hospital, and public health nurses assigned to each village. Incidence data were calculated from the 1963 population data. Neurologic definitions and classifications of Merritt were used. No unusual incidences of cerebral neoplasms, muscular dystrophy, myasthenia gravis, or indigenous multiple sclerosis were seen. A unique finding is that no cases of classic paralysis agitans were observed. (30 refs.) - *W. Asher.*

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1074 KENNEDY, W. P. Epidemiologic aspects of the problem of congenital malformations. *Birth Defects Original Article Series,* 3(2):1-18, 1967.

Although congenital malformations are rapidly emerging as a major worldwide problem in the field of pregnancy wastage, the actual size of the problem is unknown because existing reports are based on widely diverse diagnostic criteria and reporting methods, and because of underreporting. A review of world literature covering 20 million births indicates that there is some degree of congenital defect in at least 2% of all births. Reported

incidence varies depending on the reporting source used. Records based on birth certificates and "official records" indicated an incidence of 0.15%. Hospital records revealed an incidence of 1.26%. Incidence rates based on special examination information, including data from American reports which covered a wide range of minor anomalies, were 4.50%. Progress in the field of congenital abnormalities is dependent on the gathering of consistent taxonomic data in ways which will permit legitimate *inter alia* statistical comparisons. This will require international standardization of diagnostic criteria, the point in time at which diagnosis is made, and reporting methods. (217 refs.) - *J. K. Wyatt.*

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Gynecology
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Edinburgh, Scotland

1075 MERCER, CHARLES V., & NEWBROUGH, J. R. The North Nashville Health Study: Research Into the Culture of the Deprived. Nashville, Tennessee, Institute on Mental Retardation and Intellectual Development, 1967, 98 p. *IMRID Behavioral Science Monograph,* Number 8.

A semi-structured questionnaire was given to a random sample of 108 families in a poverty area of Nashville, Tennessee to determine: household and demographic data; the respondents' perception of their health problems; treatment sought; awareness of, use of, and evaluation of treatment facilities; and problems in getting to the treatment area. Differences between Negroes and whites were found in terms of marital status, age, educational level, and occupation. For both racial groups, the most frequently chosen treatment was a doctor; however, whether treatment was free or paid for was a function of race and age. Three-fourths of the respondents were unaware of the existence of public agencies to assist them with health problems and less than 1/3 were aware of the existence of a child-care center in the neighborhood. Both Negroes and whites stated that transportation was a problem in using public services. The incidence, type of health problem, pattern of seeking treatment and problems encountered by this particular population provide useful information for those presently planning community health centers in the area. (7 refs.) *A. W. Jordan.*

1076 BARNES, ALLAN C. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, 530 p. $18.50.

In order to reduce developmental disorders in infants and the death rate in newborns, increased knowledge of fetal development, and increased awareness of diagnostic techniques which may be used in cases of suspected fetal jeopardy are needed. Before developmental abnormalities can be completely understood, additional normal physiological information on human conception, on the structure and function of the placenta, on the metabolism of the amniotic fluid and fetal water, and on the organic growth and development of the fetus will be required. Factors which have been identified with fetal hazards, some of which include MR, are chromosomal abnormalities, drugs and chemicals which produce environmental alteration, irradiation, some viruses, maternal syphilis, maternal diabetes, and maternal immunologic phenomena. Intrauterine diagnostic procedures include clinical examination of the mother, hormone assays, amniotic fluid analysis, studies of placental blood flow and atropine transfer, fetal studies, and maternal serum studies. Pediatricians, gynecologists, obstetricians, medical residents and advanced students will find this book of interest. (788 refs.) - *J. K. Wyatt.*

CONTENTS: Conception and Placentation; Growth and Development; Chromosomal Aberrations.

1077 HELLMUTH, JEROME, ed. *Exceptional Infant. Volume I - The Normal Infant.* Seattle, Washington, Special Child Publications, & Bernie Straub & Jerome Hellmuth, 1967, 568 p. $12.50.

Expanded study of normal infancy and childhood is needed so that exceptional infants can be defined in terms of the ways in which their social and biological developmental performance differs from established normal patterns. Because of increasing specialization in medical and paramedical sciences, and the interaction aspects of human development, the study of infants requires the use of interdisciplinary and team approaches. Deviational development may be perceived as a special clinical category which may include such factors as deviance in perceptual apparatus, sensorimotor area and/or ego functions,

which may affect psychic development and infant-mother communication. The essays in this book are concerned mainly with learning, and with normal human and non-human infant development. This book should be of interest to pediatricians, psychologists, psychiatrists, educators, and special educators. (542 refs.) - *J. K. Wyatt.*

CONTENTS: Interdisciplinary Approach to the Study of the Exceptional Infant: A Large Scale Research Project (Mendelson); Neonatal and Infant Reflexology (Taft); Developmental Evaluation of Very Young Infants (DiLeo); Temperament in the Normal Infant (Chess); A Viewpoint on Early Affective Development (Stechler); Some Hypotheses Regarding the Significance of Individual Differences at Birth on Later Development (Korner); Predictive Value of Infant Behavior Examinations (Ames); Research Trends in Infant Learning (Gollin); Experience in Early Human Development (White, Held, & Castle); Ordinality in the Development of Schemas for Relating to Objects (Uzirgis); The Growth of the "Face" Schema: Theoretical Significance and Methodological Issues (Kagan); The Predictive Value of Changes in Visual Preferences in Early Infancy (Fantz & Nevis); The Deviant Infant: Perceptual Misinformation (Neubauer); The Development of Focused Relationships During Infancy (Yarrow); Some Determinants of Relevance of Stimuli in an Infant's Development (Provence); Social Class Level and Stimulation Potential of the Home (Caldwell); The Process of Primary Socialization in Canine and Human Infants (Scott); Implications of Primate Research for Understanding Infant Development (Jensen & Bobbitt); The Infant Curriculum--A Concept for Tomorrow (Barsch).

1078 CHESS, STELLA, & THOMAS, ALEXANDER, eds. *Annual Progress in Child Psychiatry and Child Development.* New York, New York, Brunner Mazel, 1968, 565 p. $15.00.

Physicians, psychiatrists, and psychologists will be interested in this collection of the outstanding contributions to the understanding and treatment of both normal and disturbed children during 1967. The articles included are either original research or clear, thoughtful, systematic reviews of current literature. Distinctions between MRs should be based on etiological differences such as presence of organic defect or familial MR, and not on IQ. Contrasting theoretical approaches to the cognitive functioning of MRs include: the view that there is some specific deficit inherent in all MR which makes MR performance different from that of normals of the same MA; and the view that because intellective performance depends on both intellective and nonintellective factors, the performance differences found between MRs and normals of the same MA are due to differences in motivation and experience and not to inherent cognitive deficits in MRs. Analysis of the records of 853 children from the University of Michigan Children's Psychiatric Hospital disclosed that there were definite occupational class differences in the frequency of chronic brain syndrome and MR diagnosis, and that the lowest occupational class had the smallest incidence. A study of 227 MR children and their families at the Langley Porter Neuropsychiatric Institute revealed that while maladjustment usually accompanied MR, it seemed to be due to delayed, disordered personality function and disturbed interpersonal relationships rather than to limited intellective capacity. (880 refs.) *J. K. Wyatt.*

CONTENTS:Early Infancy Studies; Mother-Infant Interaction; Pediatrics and the Study of Child Behavior; Environmental Influences on Learning; Learning Disturbances; The Disadvantaged Child; Mental Retardation;Etiology of Behavioral Disorders; Clinical Psychiatry; Childhood Psychosis; and The Abused Child.

1079 BOWERS, JOAN E., CLEMENT, JOSIE, FRANCIS, MARION I., & JOHNSTON, MARION CAMPBELL. Revised Edition. *Exceptional Children in Home, School, and Community.* Toronto, Canada, J. M. Dent & Sons, 1967, 448 p. $6.25.

Educational programs for exceptional children should preserve a balance between the student's individual and social needs. Individual differences should be identified and individualized instruction to correct the defects of group teaching should be provided by specially trained teachers. The best available instruments for estimating a child's ability to learn are intelligence tests; however, decisions about grouping or special class placement should not be based on IQ alone. Factors such as size, age, previous schooling, academic retardation, health, emotional balance, physical disability, special abilities, and social development should also be considered. Good special class teachers must: be able to find some unexpected good in every person and situation; have a respect for the abilities of each child; be knowledgeable about a number of teaching methods and possess the ability to devise new ones; have patience, fairness, understanding, sensitivity,

and love for children; be able to find interesting ways to present slow, repetitive work; be able to make a child feel needed and worthwhile and to build up his opinion of himself; be proud of his work and the efforts of his pupils; and be of sound mental and physical health. Curriculum decisions for special classes should strive to include teaching which will provide the children with knowledge or skills which will help them to become happy adults who can contribute to the welfare of society. Parents and teachers of children who are outside the limits of the normal educational range will find the educational and etiologic information in this book of interest. (279-item bibliog.) - *J. K. Wyatt.*

CONTENTS: The Dissimilarities of the Similar; The Physically Handicapped Child; The Visually Handicapped Child; The Child with Impaired Hearing; The Child with Speech Difficulties; Neurological Impairment in Children; Other Physical Disabilities; Psychological and Educational Tests; Mentally Retarded Children; Educationally Retarded Children; Cultural Deprivation in Childhood; Intellectually Gifted Children; and Emotionally Disturbed Children.

1080 HELFER, RAY E., & KEMPE, C. HENRY. *The Battered Child.* Chicago, Illinois, University of Chicago Press, 1968, 268 p. $12.50.

The problem of the battered child is 1 of the most serious concerns facing our society, and its prevention depends on the recognition and treatment of parents who demonstrate a potential for child abuse. Child abuse has been tentatively defined by the Brandeis University study as "non-accidental physical attack or physical injury, including minimal as well as fatal injury, inflicted upon children by persons caring for them." The 1967 reporting ratio for child abuse incidents in the United States was crudely estimated at 7,158. The actual incidence rates were likely to have been higher than the reporting rates. The most common urgent problem found by physicians in treating abused children is subdural hematoma. Radiographic signs are surprisingly specific in cases of child abuse and, when present, indicate a need for investigation of the circumstances surrounding the injury. Physicians have an obligation to parents as well as a physical and legal obligation to abused children. Abusive parents in 1 study exhibited widely different personality constellations but shared varying degrees of underlying conflicts such as strong oral dependency needs, unresolved identity conflicts, depressive trends and/or feelings of worthlessness, suspiciousness, distrust, and feelings of being victimized. In some cases, parent treatment directed at improving basic child rearing patterns has resulted in eliminating the danger of severe or mild physical attacks on children, reducing demands on and criticism of children, increasing parent recognition of their children as individuals, and increasing the social milieu of the parents. One of the signs of improvement in a group of abusive parents undergoing psychotherapy was a marked improvement in economic stability. Valid and reliable testing instruments which will help in the identification of potential child abusers need to be developed. Doctors, social workers, radiologists, psychologists, educators, psychiatrists, and lawyers should find this book of interest. (204 refs.) - *J. K. Wyatt.*

CONTENTS: A History of Child Abuse and Infanticide (Radbill); Incidence of Child Abuse and Demographic Characteristics of Persons Involved (Gil); The Responsibility and Role of the Physician (Helfer); Radiologic Aspects of the Battered Child Syndrome (Silverman); The Pathology of Child Abuse (Weston); A Psychiatric Study of Parents Who Abuse Infants and Small Children (Steele & Pollock); Early Case Finding as a Means of Prevention of Child Abuse (Pollock); The Role of the Social Worker (Davoren); Some Problems Encountered by Welfare Departments in the Management of the Battered Child Syndrome (Kempe); The Law and Abused Children (Paulsen); The Role of the Law Enforcement Agency (Collins).

1081 ELMER, ELIZABETH. *Children in Jeopardy.* Pittsburgh, Pennsylvania, University of Pittsburgh Press, 1967, 125 p. $5.95.

A comparison follow-up study of 50 children who were admitted to Children's Hospital, Pittsburgh, Pennsylvania over a period of 13 years with multiple bone injuries which were judged at the time of admission to have occurred because of abuse disclosed that over 25% had died or were in institutions; and of the remaining children, 22 who were definitely identified as abused were in worse condition than 4 identified as nonabused or 7 who could not be classified. While there was a high degree of dysfunction among abused, nonabused and unclassified children, and abnormalities were found among all 3 groups, abused children, particularly those who had remained in the same environment, had different kinds of problems and a substantially greater number than nonabused children. Nineteen of the 22 abused children had at least 1 handicapping deformity, and 20 of them had physical defects, speech problems, personality problems

or difficulty in intellectual functioning. Over 1/2 of the abused group were MR as compared to none of the nonabused group. The abused and unclassified groups had similar handicap syndromes and unclassified children had a higher average dysfunction score than abused children who were living in foster homes. Investigation of family structure and childbearing stress factors revealed a clear connection between child abuse and burdens related to pregnancy and children. Abusive parents also exhibited a pattern of conflict with and early estrangement from their own parents. The findings of this study illustrate the importance of identifying specific family conditions associated with multiple bone injuries in children. This is the first reported follow-up study of abused children and their families and should be of interest to psychiatrists, psychologists, pediatricians, social workers, and public health personnel. (36 refs.) - *J. K. Wyatt.*

CONTENTS: The Research Process; The Families at the Time of Study; The Children; The Families at the Time of Hospital Admission; Case Histories of Four Study Families; and Conclusions.

1082 GAMWELL, ANN M., & JOYCE, FLORENCE. *A Survey of Problems of Clothing for the Sick and Disabled both in Hospital and in the Community to Include the Elderly Infirm and the Mentally Disordered.* London, England, The Disabled Living Activities Group of the Central Council for the Disabled, 1966, 72 p. (Price unknown).

A survey of the clothing problems of sick and disabled persons in the United Kingdom disclosed that: an immediate study of the standard of comfort and appearance of many disabled persons is needed; physically handicapped, SMR, and aged mentally ill persons experience acute difficulty with all garments related to incontinence; study and improvement of the garments issued by the National Health Service and of the manner in which they are issued is needed; and some appliances issued by the National Health Service cause expensive clothing difficulties which could be avoided if minor alterations were made. More than 80% of the disabled considered clothing size and design to be a problem. Other major problems for the disabled were wear, putting on and taking off, fastening, and comfort and suitability. The major problem listed by those caring for the disabled was laundering and dry cleaning. This was followed by comfort and suitability, social customs and habits, administrative sources, and size. Garments that presented the most problems for the disabled were footwear, trousers, corsets, and jackets. Those caring for the disabled considered footwear, trousers, nightwear, and socks to be the greatest sources of difficulty. The most important finding of the study was that although manufacturers are interested in receiving comments and guidance about the clothing they produce, there is a lack of communication between manufacturers and users within hospitals, and between all those concerned with the clothing problems of the disabled. Clothing manufacturers, institution personnel, rehabilitation personnel, and parents of sick and disabled persons will find the information reported in this book of interest. (14 refs.) - *J. K. Wyatt.*

CONTENTS: Aims of the Study; Definitions and Methods; Limitations of the Study; Considerations Related to the Disabled Wearer; Considerations Related to Garments; Numerical Assessment of Problems and Solutions; Material Gathered from Visits and Correspondence; Clothing--Conclusions Related to Garments;The Disabled Person--Conclusions Related to the Disabled Wearer; Conclusions Related to Administration; Information on Clothing for the Disabled; Investigations.

MEDICINE AND ALLIED SCIENCES

Diagnosis (General)

1083 STAFFORD, RICHARD L., & MEYER, ROGER J. Diagnosis and counseling for the mentally retarded child. *Clinical Pediatrics*, 7(3):153-155, 1968.

The emotional, behavioral, and educational aspects of the MR should be subject to continued evaluation by health-care teams. The team should consist of teachers, doctors, psychologists, and social workers, and is important in successful management of the MR. Personality problems must be recognized, and the usefulness of psychotherapy considered in each individual case. The assessment of parental attitudes and anxieties is also important. Diagnoses and data should be explained in honesty and in layman's terms, and opportunities for the parents to understand and to ask questions should be liberal. Regularly scheduled interviews with the parents are needed to chart the progress and adjustment of the MR in school, in the community, and at home. (8 refs.) - *L. E. Clark.*

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1084 McDERMOTT, JOHN F., JR., HARRISON, SAUL I., SCHRAGER, JULES, WILSON, PAUL, KILLINS, ELIZABETH, LINDY, JANET, & WAGGONER, RAYMOND W., JR. Social class and mental illness in children: The diagnosis of organicity and mental retardation. *Journal of the American Academy of Child Psychiatry*, 4(2):309-320, 1967.

An examination of the intake records of 853 children evaluated at the University of Michigan Children's Psychiatric Hospital during a 2-year period disclosed that there were definite occupational class differences in the frequency of chronic brain syndrome and MR diagnoses, and the smallest incidence of these diagnoses was in the lowest occupational class. Socioeconomic class groups were based on fathers' occupations which were: no occupation or habitual unemployment; skilled laborer; lower white collar; upper white collar; and professional or executive. These findings are paradoxical because although there were no occupational class differences in the frequency with which the historical and clinical factors usually related to chronic brain syndrome and MR diagnoses were found, there were definite occupational class differences in frequency of diagnosis. Other empirical evidence supports the hypothesis that there is an inverse relationship between cerebral dysfunction and social class standing. The atypical findings of this survey may be due to specific factors which operate in this hospital. These may include preselection of the patient population by family and community attitudes, clinic expectations of children from different social classes, and the effect of different diagnoses on a child's community. (14 refs.) - *J. K. Wyatt.*

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1085 ZUCMAN, ELISABETH. Diagnostic precoce des deficiences mentales (Early diagnosis of mental deficiencies). *Nos Enfants Inadaptes*, 27(3):11-13, 1968.

Early diagnosis of MR is necessary so that a child can receive proper care. There should be careful examination for MR if there is prematurity of 2 months or more, prolonged labor, Rh or ABO factors, toxemia, anoxia, or any congenital disorders such as trisomy 21, mongolism, or intense jaundice. If a child is a normal newborn, continued surveillance of his development is essential. From 6 months to 1 year, a child should establish contact with the outside world by smiling, reaching for objects, and crying when left alone. During the second year, the child

should walk, ask for food and other objects, and become toilet trained. From 24 to 30 months, the child should begin to talk. If an infant does not develop as he should, a monthly examination is necessary to chart his progress. Even though a child is recognizably retarded, a prognosis cannot be arrived at until the age of 8. Systematic separation of the child from his family upon discovery of MR is not justifiable. Early diagnosis of MR is necessary to help the child develop as fully as possible, to give the family correct guidance, and to prevent the development of severe complications in the child. However, the ties between the parents and a retarded child must be respected during infancy and early childhood. (No refs.) - *M. Lender.*

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1086 DUCHE, J. Diagnostic precoce du deficit mental (Early diagnosis of mental deficiency). *La Medecine Infantile*, 75(4): 271-276, 1968.

Early diagnosis of MR is necessary for a child to reach his potential and should occur before a child reaches the age of 5. Factors to be considered in diagnosis of mental deficiency are family history, history of the pregnancy and labor, health of the infant at birth and as a neonate, and presence of *cri du chat*, Sturge-Weber syndrome, mongolism, or other disorder. A neurological exam and a study of the child's development are imperative to determine MR. By the age of 6-12 months, a child should have established contact with the world. In the second year, he should develop his autonomy, and by the third year, he should use language to communicate effectively. Chromatography of amino acids and search for phenylpyruvic acid in urine, retinal pigmentary disorders, chromosome aberrations, and Rh or ABO factors may lead to early discovery of MR. In France, 50% of the MR have IQs of 65 or over, while 18% have IQs of 50-64, 13.3% have IQs of 30-50, and 4.4% are below 30. IQ is only of value at the moment it is recorded, since proper care can lead to great improvement. Early detection of MR benefits both a child and his family. (No refs.) - *M. Lender.*

No address

1087 BOISSE, J. Depistage precoce des maladies metaboliques et genetiques (symposium) (Early discovery of metabolic and genetic disorders [symposium]). *La Medecine Infantile*, 75(4):255-257, 1968.

An early discovery of genetic and metabolic causes of MR should lead to prevention of many brain disorders. Genetic counseling is very important when a chromosomal aberration is present in a parent as well as in the offspring; in 4 to 5% of mongolism caused by trisomy 21, the translocation occurs in 1 of the parents and is transmitted to 1 out of every 2 or 3 offspring. Dietary measures can often be taken when the cause of mental retardation is metabolic if the disorder is found before symptoms appear. Simple, quick, inexpensive, and accurate tests can be used to locate lipid, hydrocarbon, and protein metabolic anomalies. Therapy for lipid irregularities is unknown at this time, but much research is being conducted in this field. Galactosemia, a hydrocarbon irregularity, can be determined by measurement of galactose in the urine, and if discovered early enough, MR in the neonate can be avoided. Protein anomalies such as phenylketonuria, leucinosis, histidinemia, and tyrosinosis can often be found with a phenistix test; cystinuria and homocystinuria may be discovered by Brand's reaction and hyperglycinemia, isovaleric acidemia, and leucinosis may be found if ketosis, ketonemia, or ketonuria are in evidence. Because most tests currently being used do have drawbacks, a test to detect as many metabolic disorders as soon as possible is needed. (No refs.) *M. Lender.*

1088 LENZ, W. Diagnosis in medical genetics. In: Crow, Neel, ed. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 29-36.

A diagnosis based on clinical signs may not be as reliable as the 1 confirmed by karyotypic or biochemical analysis in chromosomal aberrations and monogenic errors of metabolism, but the clinical phenotype without supporting genetic correlates often must suffice for diagnoses of polygenic functional disorders, abnormalities of tissue structure, and malformations. Although diagnostic precision cannot be attained in these latter entities without the identification of biochemical defects, analysis of the clinical

description and family history will give support for future biochemical studies. These criteria have been useful in differentiating general or localized skeletal abnormalities such as asphyxiant thoracic dystrophy, cartilage-hair hypoplasia, metaphyseal dysostosis, and thalidomide embryopathy, even though the specific biochemical insults are as yet undetermined. (15 refs.) - *E. L. Rowan.*

1089 FALLS, HAROLD F. The eye and hand as an aid to diagnosis of hereditary constitutional syndromes. In: Crow, Neel, ed. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 385-410.

The eye and hand manifestations of genetically determined, systemic diseases provide the clinician with a wealth of diagnostic information. Careful evaluation of the eye and its adnexa and the hand in terms of pigmentation, texture, movement, deformity, size, muscle tonus, muscle mass, tumors, nodules, lesions, and secretions will give clues to metabolic disorders, disturbances of keratinization of the skin, neurocutaneous syndromes, hyperplasias, keratoses, atrophies of the skin, connective tissue syndromes, bullous and vesicular skin disorders, chromosomal disorder syndromes, craniofacioskeletal syndromes, syndromes with predominant skin manifestations, chronic renal tubular insufficiency syndromes, and neurological disorders. (10 refs.) - *E. L. Rowan.*

1090 PENROSE, L. S. Memorandum on dermatoglyphic nomenclature. *Birth Defects: Original Article Series*, 4(3):1-13, 1968.

The need for the clarification and standardization of human dermatoglyphic nomenclature has arisen because of an increasing recognition of the clinical significance of dermatoglyphics in relation to birth defects. Dermatoglyphic studies are concerned with the anatomy, dimensions, and minutiae of the epidermal ridges which form systems of lines, parallel in small fields, on the surface of the stratum corneum. Principles of configurational arrangement include open fields; arches; fan, cusp, or multiplication; vestiges; true patterns; the triradius; and the loop. Pattern types used to identify finger configurations depend on the number of triradii present. There is a rough correspondence between the configurational areas of the palm and the regions of the fetal mounds. Configurational areas of the palm include the hypothenar, the thenar, and interdigital areas I, II, III, and IV. Toe and finger, and sole and palm analyses are analogous to a large extent. Quantitative data obtained from dermatoglyphic studies include metrical observations, determinations of the positions of triradii and of pattern intensity, a finger ridge-count, a total ridge-count, an absolute ridge-count, a palm ridge-count, a sole ridge-count, a measurement of ridge-count variation, determination of palmar main line exit frequencies and of a main line index, and comparison of the statistics of the right and left hands. (8 refs.) - *J. K. Wyatt.*

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1091 KUMAR, D. Intra-uterine diagnosis, indices of fetal jeopardy and intra-uterine therapy. In: Barnes, Allan C., ed. *Intra-Uterine Development*. Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 26, p. 477-497.

Clinical procedures which may be used to assess the intrauterine status of fetal life, include clinical examination, hormone assays, analysis of amniotic fluid, studies of placental blood flow and atropine transfer, fetus studies, maternal serum studies, and placental biopsies. A clinical examination of the mother composed of a maternal history and a prenatal examination yields a remarkable amount of data about the state of the fetus. Hormone assay procedures can be used to estimate urinary estriol excretion, urinary pregnanediol excretion, chorionic gonadotrophin level, and hormonal changes. Quantitative analysis of the amniotic fluid can be accomplished by naked eye examination; by spectrophotometric scanning and chemical bilirubin determinations; and by studies of 17-ketosteroids, pregnanetriol and chromosomes. The quantity of amniotic fluid may be determined by pO_2 and pCo_2 measurements. Diagnostic ultrasound, electrocardiography, phonocardiography, cardiotacography, encephalography, and scalp studies can be used to study the development of the fetus directly. Direct fetal therapy may be accomplished by intrauterine transfusion or by intramuscular injections. (27 refs.) - *J. K. Wyatt.*

1092 VOYCE, M. A., & PREECE, A. W. Digital pulse volume in hemiplegia. *Developmental Medicine and Child Neurology*, 10(5): 637-640, 1968.

The digital pulse volume is studied in analysis of 10 patients ranging in CA from 5-60 years who have been hemiplegic since infancy. This study was completed with the Ss dressed in indoor clothes in an environment with normal room temperature. Pulse volume was monitored by employing a light beam focused on a photocell. The index finger of each hand was placed at heart level. Results indicated that the total digital blood flow in the hemiplegic digit seemed to be decreased. A decreased pulse amplitude on the hemiplegic side was determined in 8 of the 10 cases. It was suggested that these data are related to diminished skin circulation. Muscular activity in the forearm seemed to be another variable influencing pulse amplitude. Digital circulation was impaired by involuntary muscle spasm associated with hemiplegia. These spasms can occur at rest or as a result of emotional stress. (7 refs.) - *B. Bradley.*

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1093 PLAUT, THOMAS F. Lumbar puncture in children: Its value and risk. *Clinical Pediatrics*, 7(3):130-133, 1968.

The diagnostic procedure of lumbar puncture in children was evaluated in a survey of 88 pediatric patients from the Whitesburg Appalachian Regional Hospital in southeastern Kentucky. This procedure was used when: unexplained fever was present; signs of meningeal irritation were present; seizure disorder occurred; "other neurological phenomena" were present; miscellaneous factors such as having a sibling with meningitis were active; or follow-up after meningitis was necessary. Children ranging in CA from 1-4 years were given preliminary sedation and those over 5 had local infiltration anesthesia in addition to phenobarbital and chlorpromazine. Infants received neither sedation nor infiltration anesthesia. Lumbar puncture indicated the diagnosis in 9 of the 92 diagnostic punctures. Bacterial meningitis was determined in 5 of 58 children and rapid treatment led to complete cures in all cases; aseptic meningitis was found in 3 additional children; and a diagnosis of brain tumor was supported in another child. Antibiotic treatment may suppress signs of a meningeal bacterial infection and lumbar puncture can be a valuable diagnostic tool. Five children had complaints after the lumbar puncture, but these were not considered serious. Children who struggle should have heavier sedation to prevent complications. It is concluded that the risk of lumbar puncture is minimal when its benefits in diagnosing meningitis are considered. It should be used whenever a child is ill with an unexplained fever or displays indications of meningeal irritation. (2 refs.) *B. Bradley.*

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1094 GELLIS, SYDNEY S. Assaying the neonate's past. *Hospital Practice*, 3(5): 9, 1968. (Editorial)

The Yerushalmy proposal for classification of low birth-weight infants by use of correlates of weight and gestational age, improves the accuracy of the determination of whether the infant's smallness is the result of short gestation, inadequate placenta, congenital defect, or maternal disorder. Relevancy of the 5 group classifications for an individual child is limited by the physician's ability to evaluate individual factors such as activity, color, cry, and skin texture. (No refs.) - *J. Snodgrass.*

No address

1095 GEHRING, H. R. Das EEG-Symptom der "intermittierenden δ-Rhythmen" im Kindesalter. Eine korrelative Studie an 578 Fallen (The intermittent δ-rhythm in EEGs in infancy. One correlative study of 578 patients). *Helvetica Paediatrica Acta*, 23(4): 350-372, 1968.

The characteristics of intermittent δ-rhythms in the EEGs of children and the correlations to the clinic are reviewed. The EEG sign was found in 578 of 6,840 patients examined in a 10-year period at the EEG-Department of Pediatric University Clinic of Zurich. We found the abnormality in every age of infancy. It culminates independently of the cause at the

age of 4 to 5 years, predominating in the parieto-temporo-occipital regions. Forty-three percent of our patients with intermittent δ-rhythms are epileptics, the rest in diminishing series: patients with meningo-encephalitis, head injuries, degenerating diseases of the brain, metabolic disturbances, vascular affections, psychic abnormalities, and brain tumors. One/second- and 2/second-rhythms are related to acute clinical symptoms; 3/second and 4/second to chronic states. Three/second-rhythms are associated with epileptic seizures, especially with petit mal. Asymmetric and unilateral distribution implies a focus sign in the case of focal seizures but there is no significant correlation to circumscribed motor or sensory disturbances. In the case of unilateral abnormality in the arteriography or the pneumoencephalogram, the δ-rhythms were found on the side of the visualized damage. The progress of δ-rhythms is different if they first appear in the acute or in the chronic stage of a disease. In numerous epileptic cases the δ-rhythms were recorded some years earlier as the specific discharges of epilepsy. (29 refs.) - *Journal summary.*

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Prevention and Etiology (General)

1096 AEBI, U. Faktoren erhohten Risikos fur schwere geistige Behinderung (Factors increasing the risk of severe mental retardation). *Schweizerische Medizinische Wochenschrift*, 98(2):47-54, 1968.

The Chi-square test was used to correlate prenatal and parturition environments with psychomotor development in 369 normal, 139 very SMR and 127 SMR children. Of these groups, 31 of the very SMR and 15 of the SMR group were omitted from statistical comparisons since they had hereditary or postnatally acquired diseases of the CNS. A significantly higher incidence of MR was seen in children born at home in comparison with those born in regional or university hospitals. Low birth-weight was significantly correlated with the subsequent development of motor handicaps; however, no such correlation was established between psychomotor disorders and epilepsy with respect to birth-weight. A significant correlation between epilepsy and motor disorders was seen, but this probably was due to various etiological factors. No significant differences were seen between nephropathy of pregnant mothers, infections in pregnancy, previous abortions, exchange transfusions in the newborn, forceps delivery, abnormal fetal presentation, or white asphyxia, and subsequent MR. Slightly significant differences were found for twin pregnancy, brain hemorrhage, and blue asphyxia and later MR; however, all asphyxias and all abnormalities of perinatal history showed highly significant differences. Since low birth-weight, 1 of the main factors in MR, is difficult to influence, the incidence of SMR might best be decreased by improved pediatric care of the newborn. (14 refs.) - *K. Drossman.*

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1097 KIRMAN, BRIAN H. *Mental Retardation: Some Recent Developments in the Study of Causes and Social Effects of This Problem.* London, England, Pergamon Press, 1968, 39 p. (Price unknown)

MR is very common and in spite of recent advances, very little is known about its nature and etiology. Factors which have been identified as related to MR are certain chemical disorders, the absence or faulty functioning of an enzyme, hereditary genetic conditions, mutations, maternal age, chromosomal abnormalities, nervous system malformations, brain dysfunctions, and birth injury. A 1959 review of 1,900 MR children admitted to Fountain Hospital, England, disclosed that definite etiology could be suggested in only 20%. It is most difficult to identify cause in mild forms of MR, and almost as difficult in the most severe cases. Precise information about incidence and prevalence; the diseases which produce MR; and the relationship of MR to social, cultural, and economic conditions is needed. British legislation reflects changes in attitudes toward MR; the 1913 Mental Deficiency Act which was based on the view that the majority of MRs should be cared for in institutions has been replaced by the 1959 Mental Health Act which is aimed at the integration of MRs into the community. Physicians, psychiatrists, biochemists, neurologists, social scientists, educators, and lay persons interested in the problems of definition and recognition of MR will find this book of interest. (7-item bibliog.) - *J. K. Wyatt.*

1098 INGRAM, T. T. S. Risks to the sibs of stillborn children. *Developmental Medicine and Child Neurology,* 10(5):662-663, 1968. (Annotation)

With the information presently available to clinicians about the patterns of incidence, severity, and variation of manifestations of heredity disorders, it is difficult to give parents an accurate prediction of the chances of producing further handicapped children after the birth of 1 malformed child. Computerized mass information on the occurrency of stillbirths and handicaps among children and adults in British Columbia provided statistical data that showed the risk of the birth of a dead or handicapped child in all births to be 6.8%, after 1 stillbirth 15.4%, and after 2 stillbirths 34.3%. Further computerization of medical records is needed for reliable interpretation of statistical data. (13 refs.) - *E. F. MacGregor.*

Department of Child Life and Health
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1099 GEORGES-JANET, L. Interet de la prise en charge medicale precoce pour le traitement et le pronostic (Early medical attention for treatment and prognosis). *La Medecine Infantile,* 75(4):295-296, 299-300, 1968.

In order for anMR child to learn as much as possible, early treatment and competent prognosis of the patient is necessary. Goals with the MR should be independence, maximum comfort for the child, and avoidance of secondary physical and mental complications. To obtain these objectives, the cause of the retardation should be treated when possible and because the MR may have physical defects, careful treatment by a pediatrician may be necessary. Prognosis should include the amount of independence the child can be expected to achieve and his social comportment. Physical education, with emphasis on motor skills, and medication for epilepsy and behavior problems are important. Education on self-care, comprehension of size, color and form, and speech and hearing are of primary consideration. The child under 3 should live at home and the preparation for institutionalization should be in collaboration with the family. (No refs.) - *M. Lender.*

No address

1100 WALLACE, HELEN M., DOOLEY, SAMUEL W., THIELE, RONALD L., FRASER, CONSTANCE, & EISNER, VICTOR. Comprehensive health care of children. *Journal of Public Health,* 58(10): 1839-1847, 1968.

Optimal, coordinated, accessible, and continuous care are necessary in a comprehensive health care program for children and their families. Optimal care begins prior to a child's conception and continues through adolescence. An integrated team is essential to provide care on a continuing basis and ancillary services are necessary for the care to be effective. Coordinated care with specialized services or supporting programs easily accessible is also necessary. Treatment, corrective measures, and supervision should be provided by the same team for each individual family. In assuming the responsibility for organizing and implementing comprehensive health care programs, medical schools or hospitals, and the health departments are taking increasing roles. Ideally, the coordination of both in conjunction with recent federal legislation would be advantageous; both should cooperatively seek additional legislation in order to meet the increased community needs. Major community agencies and advisory boards can assist in determining policies and

planning. Provision should be made for research and training, evaluation of services needed, type and quality of care, and more effective methods. The opportunity to study the skills of professional and nonprofessional staff should be offered and integrated into the total program. (9 refs.) - *S. M. Half.*

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1101 JAMES, L. STANLEY. Scientific basis for current perinatal care. *Archives of Disease in Childhood,* 42(225):457-466, 1967.

Recent scientific advances based on animal experiments and human investigation permit adjustment of fetal environment and body chemistry *in utero* as well as in the first few hours of life. Analysis of amniotic fluid and capillary blood of the fetal scalp in late stages of labor will permit accurate biochemical determination of oxygen saturation and acid-base balance. In a series of experiments with primates, fetal depression could be correlated with a fall in pH below 7.2. Because pH continues to fall when oxygen saturation is zero, the former is a better measure of fetal status. Infusion of alkali has been shown to protect against the cerebral anoxia tissue damage in infants. Hypothermia has little beneficial effect. Reduction of placental blood now is the primary mechanism of fetal hypoxia suggesting that immediate delivery may be required if the situation cannot be corrected. Heroic efforts at fetal resuscitation are likely to be met at first with frustration at seeing the survival of MRs. Persistence should teach whom and when to treat in order to promote infant survival. The pediatrician should take a leading role in perinatal care. (21 refs.) *W. Asher.*

1102 EISEN, A. A., & NORRIS, J. W. Adrenal steroid therapy in neurological disease, Part II. *Canadian Medical Association Journal,* 100(2):66-70, 1969.

There are definite indications for adrenal steroids in neurological disease, but they should be limited to those conditions where they are of scientifically proven value. In infections of the CNS they are of value in: endotoxin shock with pyogenic meningitis; in certain kinds of cerebral edema; and in preventing subarachnoid adhesions in both pyogenic and tuberculous meningitis. Their hazards must be weighed against their need in combating edema in viral meningitis. In the neuropathies, steroids are clinically indicated for: Ss with the carpal-tunnel syndrome who refuse operation or suffer during pregnancy; and Ss with Bell's palsy with a poor prognosis for recovery as determined by the electromyogram. Adrenal corticotrophic hormone is indicated in primary infantile spasms, but will not affect MR once established. Steroids are generally contraindicated in convulsive disorders. The mechanism by which steroids combat cerebral edema of the vasogenic variety is unknown, but they are of established value used preoperatively in neurosurgery. The usefulness of steroids must be weighed against complications of psychosis, myopathy, benign intracranial hypertension, and glaucoma. Steroids often are associated with irritability, euphoria, and depression. Muscle weakness on the basis of hypokalemia may occur, and dexamethasone and triamcinolone are chiefly responsible. Children on prednisone or triamcinolone for long duration, whose doses are reduced or stopped may exhibit pseudotumor cerebri. Steroids are not a panacea and their use in medicine should be governed by demonstrated effectiveness through controlled studies. (106 refs.) *L. E. Clark.*

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Etiologic Groupings

Infections, Intoxication, and Hemolytic Disorders

1103 What becomes of baby born with rubella? *Medical World News,* 9(7):65, 1968.

Doctors in Sydney (Australia) have conducted a 25-year follow-up study of 50 (22 male; 28 female) congenital rubella patients born during the 1940-41 rubella epidemic in New South Wales. The investigation revealed that undiagnosed deafness at birth may have contributed to improper institutionalization

in some cases. The study also disclosed the following abnormalities: deafness (48 Ss); typical rubella cataracts or chorioretinopathy (26 Ss); congenital cardiovascular defects (11 Ss); minor skeletal defects (20 Ss); undescended testes (6 of 22 males); severe vaginal stenosis (1 of 28 females); MR (1 SMR S, 4 MMR Ss); and 2 defects previously undetected--systemic arterial hypertension (3 Ss), and undiagnosed cataracts (2 Ss). It is noteworthy that 7 of 8 children produced by 11 Ss who married were normal. The development of active immunization promises near extinction of congenital rubella in the future, and it is suggested that existing cases be exhaustively recorded. (No refs.) - *J. P. West.*

1104 SIEGEL, MORRIS, FUERST, HAROLD T., & DUGGAN, WILLIAM. Rubella in mother and congenital cataracts in child: Comparative data in periods with and without epidemics from 1957 to 1964. *Journal of the American Medical Association,* 203(9):632-636, 1968.

The incidence of congenital cataracts, heart disease, and bone conduction deafness, during periods of varying epidemicity of rubella and other viruses was studied. Among 1,526 single live offspring studied, 731 were from virus-infected mothers, and 795 from control mothers. All cases of rubella, measles, chicken pox, mumps, and hepatitis reported in childbearing ages were studied, and diagnoses were confirmed by epidemiologists. The offspring were examined at ages, 1, 2, and 5 years for speech and hearing defects, psychomotor development, and heart defects. Definitive data is presented on congenital cataracts only; the frequency of congenital cataracts in New York City from 1957 to 1964 was obtained from hospital records. Children with cataracts who were born before the study, instances of familial congenital cataracts, cases of injury, and cataracts of doubtful congenital origin were excluded. In the hospital study, a sharp increase in congenital cataracts was noted in the 1964 group, due to a history of rubella in the mothers during that epidemic year. The adjusted rate of incidence of congenital cataracts in Ss born to mothers exposed during the first 8 weeks of gestation compared well with the hospital study. The data suggest an increased virulence of rubella for fetal lens in 1964. Studies employing modern laboratory methods for confirming the diagnosis of rubella would contribute to the validity of the data. (6 refs.) - *L. E. Clark.*

450 Clarkson Avenue
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1105 PLOTKIN, S. A., INGALLS, T. H., FARQUHAR, J. D., & KATZ, MICHAEL. Intranasally administered rubella vaccine. *Lancet,* 2(7575):934-937, 1968.

The RA27/3 strain of rubella virus, which is an effective attenuated strain when given subcutaneously, is also immunogenic when given intranasally. Given in a dose of 1,000 plaque-forming units (PFU) in the form of nose drops, the virus produced antibodies in 93% of Ss (mainly children); a dose of 100 PFU immunized 50% of Ss. Clinical reaction was absent except for occasional lymphadenopathy. Nasopharyngeal virus excretion was sporadic, and there was no spread to contacts. Antibody responses to intranasal vaccination were equivalent to those obtained after subcutaneous inoculation. (17 refs.) - *Journal summary.*

University of Pennsylvania
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1106 SIMONS, M. J., & FITZGERALD, M. G. Rubella virus and human lymphocytes in culture. *Lancet,* 2(7575):937-940, 1968.

Lymphocytes from adults immune to rubella virus exhibited a dose-dependent response to inactivated rubella virus *in vitro.* A variable response was observed when lymphocytes from 2 patients with congenital rubella were cultured with inactivated rubella virus but all of 7 patients responded to stimulation with phytohemagglutinin (PHA). The PHA response of lymphocytes from immune adults, and from the 7 congenital rubella babies, was inhibited by prior exposure to exogenous rubella virus. (15 refs.) - *Journal summary.*

Surgical Research Unit
Royal Children's Hospital Research Foundation
Parkville, Victoria 3052, Australia

1107 SIMONS, M. J., & JACK, IAN. Lymphocyte viraemia in congenital rubella. *Lancet,* 2(7575):953-954, 1968. (Letter)

Venous blood was taken from 3 babies with the congenital rubella syndrome. Lymphocytes were separated out, cultured, and examined for the presence of rubella virus. It is concluded that the circulating small lymphocytes of some such patients do contain rubella virus. (10 refs.) - *Journal summary.*

Research Foundation
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Parkville, Victoria 3052, Australia

1108 SIMONS, M. J. Congenital rubella: An immunological paradox? *Lancet*, 2(7581): 1275-1278, 1968.

It is widely assumed that a deficiency of immune function underlies the coexistence of viral excretion and specific-antibody production in patients with congenital rubella. Recent demonstrations of lymphocyte viremia, and of lymphocyte competence for response to phytohemagglutinin, have made this assumption more questionable. Whether or not the cellular immune system is unresponsive to rubella virus, cellular viremia can be expected to continue for the lifespan of the infected cell. Circulating specific antibody can only assist with the elimination of rubella virus once the virus has been released from cells, since it does not gain access to intracellular virus. Thus it is possible that viral excretion and eventual termination of infection is principally determined by the longevity of the infected cell. An interpretation in immunological terms therefore is not required. (33 refs.) - *Journal summary.*

Royal Children's Hospital
Research Foundation
Melbourne, Australia

1109 KOGAN, B. A., MURRAY, R. A., HANES, B., GROSS, P. A., CARSON, C. C., HEIDBREDER, G. A., & GLASS, L. H. Mass measles immunization in Los Angeles County. *Journal of Public Health*, 58(10):1883-1890, 1968.

A mass immunization program for measles in Los Angeles County is thought to have prevented 25 cases of mental and physical retardation. Community health services, public appeal, public awareness, and public cooperation helped control a measles epidemic by mass immunization. It is important that constant maintenance immunization programs be continued for the prevention and eradication of measles. (14 refs.) - *S. M. Half.*

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220 North Broadway
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1110 Control of measles. *British Medical Journal*, 4(5628):404-405, 1968. (Editorial)

In 1966, in Rhode Island a live measles vaccine was administered in order to control measles throughout the state. Sixty-five to 70% of the population was vaccinated and those suspected of having measles after having been vaccinated (71 Ss) were subjected to serological investigation. Forty-two of the suspected cases were clinically compatible with measles; 14 of the clinically compatible cases were solitary while 28 occurred in 5 small groups. Out-of-state visitors seemed to be the largest source of the disease. The immunization program showed that a susceptible population could be made immune and that side reactions were not serious. (6 refs.) *K. B. Brown.*

1111 WRIGHT, HARRY T., JR., REED, GEORGE, & LANDING, BENJAMIN H. Central nervous system disease in a newborn infant. *American Journal of Diseases of Children*, 115(6):739-745, 1968.

A newborn infant admitted to the hospital at 10 days of age with appetite loss, intermittent apneic episodes, and myoclonic seizures was diagnosed as having CNS disease of an infectious origin. The infant died on the sixth day of hospitalization and at autopsy, *Herpes simplex* meningoencephalitis was confirmed as the primary disorder. The mother had received prochlorperazine, isopropamide, hydrochlorothiazide, and thyroid extract during her pregnancy and 2 months before delivery had experienced an attack of *H. gestationis*. Delivery was 5 weeks premature, but the infant appeared normal at birth. Gavage feeding became necessary shortly after birth, and other significant developments were the presence of sticky mucous in the oropharynx; an 8-ounce weight loss; jaundice; hepatomegaly; flaccidity; and xanthochromic cerebrospinal fluid. The Moro, tonic neck, suck rooting, and deep tendon reflexes were absent upon hospital admittance. Despite vigorous therapeutic measures, the infant succumbed to overwhelming infection (a characteristic of *H. simplex* infection in infants) and the virus was found in the esophagus, trachea, and lungs, as well as the brain at autopsy. It is very likely that there was a connection between the *H. gestationis* of the mother and the fatal illness of her infant. (8 refs.) - *R. Froelich.*

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1112 SEVER, JOHN L. Effects of viruses on the developing fetus. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 21, p. 404-418.

Rubella and cytomegalovirus are 2 of the more than a dozen viruses associated with fetal development disorders and extensive fetal tissue damage. These 2 viruses may produce congenital malformations, chronic fetal infections, and/or MR. Although the mechanism of the malformations and tissue damage is not completely understood, in some cases it appears to be related to direct, extensive tissue infection. If these important maternal infections and their transmission to the fetus can be controlled or prevented, their damaging effects to the fetus can be eliminated. (18 refs.) - *J. K. Wyatt.*

1113 ATHANASSIADES, TH., & NICOLOPOULOS, D. Complications of varicella. *Lancet,* 2(7564):403, 1968. (Letter)

A study of 10 children with varicella supports the theory that respiratory complications tend to occur with a "profuse" rash, while CNS disturbances seem to be associated with a sparse rash. Of those studied, 3 (CA 5 mos, 7 mos, and 3 yrs) had pneumonia (the 5-month-old, also had congenital heart disease and died shortly after being admitted to the clinic); 1 (CA 7 yrs) had severe thrombocytopenic purpura; and 6 (CA 2 1/2 to 10 yrs) had disturbances of the CNS. An 8-year-old boy had acoustic nerve damage which caused complete deafness--a disorder not previously reported with varicella. (1 ref.)
J. P. West.

University Paediatric Clinic
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Athens, Greece

1114 RABIN, ERWIN R., JENSON, A. BENNETT, & MELNICK, JOSEPH L. Herpes simplex virus in mice: Electron microscopy of neural spread. *Science,* 162(3849):126-127, 1968.

Herpes simplex virus rapidly infected the trigeminal nerves of mice after intranasal inoculation. Centripetal neural spread was suggested by histologic evidence of encephalitis in the area of attachment of the trigeminal nerve. Furthermore, electron microscopy revealed virus replication primarily within Schwann cells of the trigeminal nerve, and neurons of the gasserian ganglion. (9 refs.) - *Journal abstract.*

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1115 Herpes encephalitis. *British Medical Journal,* 3(5614):331-332, 1968. (Editorial)

Herpes encephalitis is 1 of several severe infections of the central nervous system (CNS) now known to be caused by the *Herpes simplex* virus. It occurs in any age group, but in infants, not only is the CNS attacked, but often the liver, adrenals, and skin are involved; while in the adult, the illness is confined to the CNS. Initial symptoms are headache, fever, nausea, loss of memory, confusion, and agitation. Further, tests may show an expanding lesion in the brain difficult to differentiate from an abscess or tumor. Diagnosis is difficult before death although electron microscopic and immunofluorescent examinations of cortical biopsies are useful. Chemotherapy (antiviral compounds such as idoxuridine) and surgical decompression have proved helpful in some cases, but early diagnosis is important since idoxuridine treatment must start before neuronal necrosis has progressed too far. There is evidence that in some cases this is a recurrent infection and chronic encephalitis in humans, as in other animals, is a possibility. (19 refs.) - *E. F. MacGregor.*

1116 DODGE, PHILIP R. Treatment of Herpes simplex encephalitis with an antiviral agent. *Developmental Medicine and Child Neurology,* 10(5):665-666, 1968. (Annotation)

The value of 5-iodo-2-deoxyuridine (IUDR) in the treatment of *Herpes simplex* encephalitis has not been clearly established. The infection is characterized by headache, fever, mental symptoms, seizures, altered consciousness, variable motor symptoms, and meningeal signs. Diagnosis is difficult since recovery of the virus from the cerebrospinal fluid (CSF) and the brain are usually possible only in postmortem examination. Identification may be

made by a rise in complement-fixing antibodies and characteristic histopathological findings. Elevated pressure, slight to moderate pleocytosis, a slight rise in protein, and normal sugar concentrations are found in the CSF. Of 5 children (CA 11 mos to 14 yrs) given IUDR, 2 recovered with minimal neurological damage although the side effects of leukopenia and hepatic dysfunction were attributed to the drug. Early diagnosis is necessary in determining the value of this and other methods. (2 refs.) - *E. F. MacGregor.*

Mallinkrodt Department of Pediatrics
Washington University School of Medicine
St. Louis, Missouri 63110

1117 MILLER, J. D., & ROSS, CONSTANCE A. C. Encephalitis: A four-year survey. *Lancet,* 1(7552):1121-1126, 1968.

During the 4-year period, 1964-1967, 120 patients suspected of having encephalitis were seen at the Institute of Neurological Sciences, Glasgow. Fifty-two were found to have diseases other than encephalitis. Of the remaining 68 patients, the diagnosis of encephalitis was confirmed by positive virological and/or pathological findings in 20; the other 48 were finally given a presumptive diagnosis of encephalitis; in the latter group the illnesses were generally less severe than in the former group. Evidence of viral infection was obtained in 14 patients: 12 (86%) with *Herpes simplex* (1 having concurrent infection with influenza type B), 1 with adenovirus, and 1 with measles. Histological examination of brain material from 8 of the patients with *H. simplex* infection showed acute necrotizing encephalitis in 6. The age of the patient seemed an important factor in prognosis of *Herpes* encephalitis, adults having a worse prognosis than patients under 15 years of age. (23 refs.) - *Journal summary.*

Institute of Neurological Sciences
Glasgow, Scotland

1118 HORWITZ, MARSHALL S., & MOORE, GORDON T. Acute infectious lymphocytosis: An etiologic and epidemiologic study of an outbreak. *New England Journal of Medicine,* 279(8):399-404, 1968.

An outbreak of acute infectious lymphocytosis (white cell counts of 26,000 to 93,800) was studied in 27 children at a state school for the MR. The search for an etiology of the disease included infectious and noninfectious agents. Examinations of stools for parasites, cultures of throat and stool for bacteria, and cultures of throat, stool, and blood for viruses were done. An enterovirus, presently untyped, but resembling the Coxsackie A subgroup in physical, chemical, and host specificity, was isolated in 21% of the patients' stool specimens. Fourfold rises in neutralizing antibody against this enterovirus occurred in the serums of a significantly greater proportion of patients than in patient contacts. Evidence suggests a causal relation between this agent and lymphocytosis. (24 refs.) - *Journal abstract.*

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1119 CLARKE, C. A. Prevention of Rh-haemolytic disease. *British Medical Journal,* 4(5570):7-12, 1967.

Genetic studies of *Papilio* butterflies which exhibit crossover characteristics of several closely linked loci is compared to crossover frequencies in the ABO and Rh-blood typing system. An infrequency of sensitization of mothers by incompatible fetuses implicated transplacental infusion of fetal cells at or near delivery. An acid elution technique of counting fetal cells provided accurate data that the degree of maternal sensitization was proportional to the number of fetal cells in the maternal circulation. Rh-negative males injected with Rh-positive red cells coated with incomplete anti-D did not have an anti-D immune response, suggesting that injections of an anti-D γ-globulin might protect Rh-negative mothers from sensitization by Rh-positive fetuses. The combined results of 628 Ss compared to 559 controls indicated a high degree of protection from Rh-sensitization in those mothers receiving anti-D γ-globulin immediately after delivery. Risk has proven to be negligible when 5 ml of γ-globulin are given. Duration of protection and definite proof of effectiveness remains to be proven in subsequent pregnancies of the experimental group. (45 refs.) - *W. Asher.*

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1120 CLARK, C. A. Prevention of Rh-haemolytic disease. *British Medical Journal*, 4(5577):484-485, 1967.

A survey of experience in Liverpool, England since 1960 indicates that immunization of Rh-negative mothers with anti-D-γ-globulin is a safe and highly effective means of preventing Rh sensitization. All treated women had Coombs-negative, normal liveborn infants. Tests of antibody formation immediately after the birth of a second Rh-positive baby were negative. Further tests are needed to determine the minimum effective dose of anti-D-γ-globulin. Experiments with 4 groups of 10 Rh-negative men indicate that as little as 300 micrograms of ortho anti-D is effective in protecting against a large volume of injected Rh-positive blood. (1 ref.)
W. Asher.

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The University
Liverpool, England

1121 CLARKE, C. A. The prevention of Rh-immunization. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 83-91.

Successful prevention of Rh-immunization in Rh-negative mothers of Rh-positive, ABO-compatible babies has been accomplished by intramuscular injection of 5 mls of high titer anti-D γ-globulin shortly after the birth of the child. Clinical trials in Liverpool (England), Freiburg (Germany), and New York differed in parity and the presence of ABO incompatibility and high Kleihauer count (number of fetal cells in maternal circulation) as criteria for treatment, but results were uniformly encouraging as there were only 3 doubtful immunizations (Liverpool) among 256 women treated, while there were 38 immunizations among 258 controls. No antibodies developed in the 18 women (6 in each trial) who subsequently delivered another Rh-positive, ABO-compatible baby, suggesting that protection was complete and not merely a suppression of immune antibodies. A second series of trials with the more practical dosage of 1 ml of anti-D γ-globulin is under way. The mechanism of action is uncertain but the γ-globulin may block antigen sites or inhibit the antibody producing cells. (34 refs.) - *E. L. Rowan.*

1122 Suppressing Rh-immunization. *British Medical Journal*, 4(5624):135-136, 1968. (Editorial)

Rh_0 (D) antigen components affected by maternal antibodies is the primary cause of fetal hemolytic disease. Supplies of anti-D γ-globulin are limited in the United Kingdom where its use is prevalent in the prevention of Rh-immunization; therefore, only Rh-negative primiparae who deliver Rh-positive, ABO compatible infants receive it. The number of fetal cells (0-4) present is suggested as another criteria in administering anti-D γ-globulin, but in order to provide maximum protection, all Rh-negative women delivering Rh-positive ABO compatible babies without detectable antibodies and/or those unimmunized women who abort should receive a 200 μg dosage of anti-D γ-globulin. (10 refs.)
J. P. West.

1123 SUSSMAN, LEON N., UY, ROMEO, & BERK, HOWARD. The prophylaxis of Rh hemolytic disease with Rh immunoglobulin. *American Journal of Clinical Pathology*, 50(3):287-290, 1968.

Projects in the United States, Britain, and Germany indicated the safety and effectiveness of using 5 ml doses of high titer anti-D γ-globulin for prevention of maternal sensitization; however, the effective dose may be smaller than 5 ml. The British project studied 78 high risk primiparae whose blood was contaminated with 0.25 ml or more of fetal blood. None of these patients who were treated with 5 ml of high titer anti-D γ-globulin developed antibody, while 19 of the 78 control mothers produced antibody. The United States and German projects had similar success in preventing antibody formation, but their studies were not limited to high risk cases. It is suggested by some workers that small doses of anti-D γ-globulin during the third trimester may be helpful in preventing possible early sensitization, and others have shown that a 1 ml dose may be a protective dose, because transplacental bleeds are usually limited to 0.25 ml. The use of the lower dosage would greatly increase the availability of anti-D γ-globulin. (19 refs.)
M. T. Lender.

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1124 HAERING, M. Uber die Prophylaxe mit Anti-D-Globulinen zur Verhinderung der Rhesus-Sensibilisierung (Prophylaxis with Anti-D γ-globulin in the prevention of Rhesus-sensitization). *Gynaecologia,* 163(6):415-424, 1967.

Fifty-one rhesus (D) negative women, who had not been sensitized before and whose infants were rhesus (D) positive were given injections of anti-D globulin, of a titer of at least 1/2,000. Fetal cells in the maternal circulating blood were demonstrated by Kleihauer's technique and their number was assessed by the method of Schneider and Ludwig. In a number of cases the rate of disappearance of fetal cells following anti-D globulin injection was observed and plotted. The speed of disappearance was found to be dependent not only on the titer but also on the avidity of the anti-D globulin preparation and also on the amount used. A second injection was found to be necessary in some cases. The author confirmed the finding of Hindemann, that late "transfusions" of fetal cells may occur some days after fetus and placenta had been delivered. This could occur even after anti-D globulin injection. The mode of this "late transfusion" is obscure but a transperitoneal pathway is likely. For this reason the author considers it essential that fetal cells should be tested for not only at delivery but also some days after anti-D globulin injections. Thirty-one women were tested some 3 to 5 months postpartum for antibodies. None of them had formed any antibodies, but the final result of this prophylaxis can only be assessed in future pregnancies. (16 refs.) - *Journal summary.*

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1125 HIRATA, Y., MATSUO, T., SHIBATA, M., TAKATERA, Y., & NAKAMURA, K. Experimental studies on the development of kernicterus. *Biologia Neonatorum,* 12(5-6):371-377, 1968.

As the etiologic factors of kernicterus which specially develop in the newborn period, hypoxia, hypoglycemia, acidosis, and infection might participate as inducing factors besides hyperbilirubinemia. Using pregnant rats of Wistar strain, we have been successful in producing experimental prenatal kernicterus. Adrenochrome and hyaluronidase related to the vascular permeability were studied on the experimental prenatal kernicterus. As a result of various studies, we have confirmed the importance of vascular permeability in the brain or blood brain barrier causing human kernicterus. (16 refs.) - *Journal abstract.*

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Kobe, Japan

1126 MONTAGUE, ANDREW C. W. Hemolytic disease of the fetus. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 24, p. 443-466.

The main underlying process in erythroblastosis fetalis is hemolysis in the fetus, secondary to the presence of maternal antibodies against fetal blood cells. Hemolytic disease of the fetus and newborn includes anemia, icterus gravis neonatorum,and hydrops fetalis. The present concept of Rh immunology refers to many complex interrelating factors. The incidence of Rh-negative individuals varies among isolated populations, and occurs with a 15% frequency in mixed white and colored populations. Erythroblastosis survivors may be MR, and may have abnormal EEGs and a nervous type of deafness. Some important modern methods used to prognosticate the effects of an Rh-negative sensitized pregnancy on the fetus are blood typing, consideration of the mother's previous pregnancies, analysis of maternal serum antibody titers, spectrophotometric studies of amniotic fluid, chemical analysis for bilirubin, estriol determinations, and chorionic gonadotrophin determinations. Some cases of erythroblastosis fetalis may be treated by the technique of intrauterine transfusion. Specific clinical procedures have been developed for the management of Rh-negative sensitized patients, for the management of fetal death *in utero,* and to prevent Rh sensitization. (52 refs.) *J. K. Wyatt.*

1127 *Immunologic Deficiency Diseases in Man* in *Birth Defects Original Article Series,* Volume 4, Number 1. New York, New York, The National Foundation, 1968, 473 p. $15.00.

The third workshop in developmental immunobiology in February, 1967 brought together research scientists and practicing physicians from Switzerland, Holland, England, Greece, Sweden, and the United States to discuss the advances made in the brief 15-year history of the study of immunologic deficiency disease.

The 43 research papers and the lively discussions which followed ranged from the discovery of agammaglobulinemia to the interrelation of the broad spectrum of diseases with a deficit in cellular and humoral immune responses. Specific clinical and pathological entities such as lymphopenia, congenital thymus absence, defective immunoglobulin function, autoimmune responses, malignancy, and the inflammatory process were viewed within the broad research framework of the "2-cell line" concept of the development of lymphoid tissue. Clinicians and researchers will find basic knowledge in this rapidly developing field, and stimulation toward new areas of clinical and laboratory investigation in bodily defenses and immunologic defects. (1,877 refs.) - *E. L. Rowan.*

CONTENTS: The Antibody Deficiency Syndrome; Immunologic Deficiencies with Thymic Abnormalities; Pathology and Pathogenetic Mechanisms; Functional Deficiencies in Agammaglobulinemia; Immunoglobulin-A--A System for Local Defense; Other Diseases Associated with Immunologic Deficiency; and Deficiency of Functions Related to Immunologic Processes.

1128 TROLLE, DYRE. Decrease of total serum-bilirubin concentration in newborn infants after phenobarbitone treatment. *Lancet,* 2(7570):705-708, 1968.

Further personal studies are reported on the ability of phenobarbitone to decrease the serum-bilirubin concentration in infants during the first week of life. Newborn babies (808), birth weight over 2,500 g, were treated with phenobarbitone in accordance with 1 of 3 different principles: administration to the pregnant woman only; to the infant only; or to both. The last treatment (50-100 mg phenobarbitone/oz daily to the pregnant woman for at least 3 days before delivery, followed by 5 mg intramuscularly to the newborn 7-10 times in all during the first 3 days of life) proved the most effective--the decrease in infants with 13 mg or more of bilirubin/100 ml serum was 94% and the highest value among the infants treated in this way was 13.2 mg/100 ml. This decrease in serum-bilirubin concentration is most probably due to induction of enzymes in liver microsomes by phenobarbitone. (18 refs.) - *Journal summary.*

University of Copenhagen
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1129 GIBSON, SHEILA L. M., LAM, C. N., McCRAE, W. M., & GOLDBERG, A. Blood lead levels in normal and mentally deficient children. *Archives of Disease in Childhood,* 42(226):573-578, 1967.

The role of lead in the etiology of MR was investigated by measurement of blood serum lead and urinary lead excretion following penicillamine administration in 60 Ss (20 normal control children, 20 MR children with known organic etiology, and 20 children with MR from unknown causes). Elevated serum lead (>4 μg/g) was found in 3 normal and 6 idiopathic MRs. Two of the children with elevated serum lead also had elevated serum coproporphyrin. Penicillamine administration was followed by increased urinary lead in 7 of 9 Ss with elevated serum lead, but no increase in the children with normal lead levels. Urinary coproporphyrin was normal in all 3 groups before penicillamine administration, and the penicillamine had no effect on urinary coproporphyrin in those children with normal blood lead levels; however, in the 2 children with raised blood lead and blood coproporphyrin, the urinary coproporphyrin increased after penicillamine administration. δ-Aminolevulic acid urinary levels were normal in all 3 groups and were not affected by penicillamine. Erythocyte protoporphyrin levels were raised in all 9 Ss with elevated serum lead. Seven of the 9 Ss with raised blood lead were treated for 1 year with penicillamine and their serum lead level returned to normal, but the treatment had no effect on their IQs. Since none of the 9 were suspected of having lead poisoning, it is possible that the condition exists in a subacute condition. Although lead poisoning has not been shown to be a definite etiological agent in MR, it could be an aggravating factor and should be studied further. (14 refs.) - *E. Gaer.*

University of Glasgow
Glasgow, Scotland

1130 LONG, W. NEWTON, & HOLZMAN, GERALD B. Hazards to the fetus from maternal diabetes. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 23, p. 427-443.

Respiratory distress syndrome associated with prematurity is the largest cause of death of newborns of diabetic women. Infants with diabetic mothers have problems associated with ketoacidosis, excessive size, growth retardation because of maternal vascular disease, and/or congenital malformation. The obstetric management of maternal diabetes

should include identification of the disease, identification of associated complications, prescription of a diet adequate for pregnancy, and use of enough insulin to maintain relatively normal fasting blood glucose levels. In case of toxemia, pregnant diabetics should be overtreated. Women with large babies and with chronic disease should be delivered around the thirty-seventh week of gestation. (31 refs.) - *J. K. Wyatt.*

1131 BARNES, ALLAN C. The fetal environment: Drugs and chemicals. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, Chapter 19, 1968, p. 362-377.

Although it is difficult to establish specific causal relationships between teratogenesis and chemical agents administered to pregnant women, it is probable that some children with defects due to chemical contact during the intrauterine period are being produced at all times. The difficulty in establishing proof of cause-effect relationships in human reproduction is due to age dependent variations in susceptibility; response variability to drug dosage; species-dependent response variability; and lack of specificity between cause and effect. Drugs and chemicals associated with teratogenesis in humans include: thalidomide, Aminopterin, 4-aminopteroglutamin, cyclophosphamide, and the corticosteroids. Human fetal growth and development have been adversely affected by exposure to lead, tetracycline, propylthiouracil, chloropropanimide, chloroquine, excessive synthetic vitamin K, Gantrisin, quinine, reserpine, nicotine, morphine, cortisone, hexamethonium bromide, and novobiocin. The responsibility for the protection of the fetal environment rests with the internist who treats nonpregnant but susceptible women, and with the obstetrician who must be careful of drug exposures inflicted on the fetus. The major ways to implement the protection of babies from harmful drugs and chemicals are: the assumption by obstetricians of a leading role in the crusade for the widespread adoption of sensible attitudes toward drug consumption; the continued development and expansion of techniques for drug testing; and the maintenance of required institutional registries of anomalous damaged children so that trends and epidemics can be promptly identified. (9 refs.) - *J. K. Wyatt.*

Trauma or Physical Agent

1132 FISCH, ROBERT O., GRAVEM, HOWARD J., & ENGEL, ROLF R. Neurological status of survivors of neonatal respiratory distress syndrome: A preliminary report from the collaborative study. *Journal of Pediatrics,* 73(3):395-403, 1968.

An excessive number of neurological abnormalities occurs in survivors of neonatal respiratory distress syndrome as reported in a study of 34,792 infants including 34,527 controls and 59 respiratory distress syndrome survivors. At 8 months of age, the percentage of control Ss having a mental score below 74 was less than the survivors' percentage, but not statistically significant. The survivors had retarded motor development at 8 months of age and neurological abnormalities were present in 27.3% of the survivors and only 12% of the control Ss at 1 year of age. It is not known if respiratory distress syndrome is a causal factor of neurological abnormalities or if they occur coincidentally due to prematurity. (11 refs.) - *M. T. Lender.*

Department of Pediatrics
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Minneapolis, Minnesota 55455

1133 VERT, P., MARCHAL, C., KIFFER, B., CRANCE, J. -P., BADONNEL, Y., & PIERSON, M. Traitement des detresses respiratoires neo-natales: Action de la ventilation assistæ et de l'alcalinisation sur l'acidose (Treatment of newborn respiratory distress: Action of assisted ventilation and alkalinization of acidosis). *Archives Francaises de Pediatrie,* 25(6):651-672, 1968.

Respiratory distress in the newborn may be treated by assisted ventilation and alkalinization of acidosis with limited success. Among 55 cases studied, 18 were confirmed and 15 were suspected hyaline membrane disease; 5 were confirmed and 3 were suspected pulmonary hemorrhages; there were 6 cases of amniotic inhalation; 2 cases of rhesus iso-immunization; 4 pulmonary infections; 1 pneumothorax; and 1 pulmonary hemorrhage and hyaline membrane disease. Alkalinization was achieved with sodium bicarbonate or trihydroxymethylamino-methane (THAM) through the umbilical or scalp vein. Assisted ventilation was performed by naso-tracheal intubation with the use of an RPR respirator. Alkalinization by THAM administered through scalp veins did not correct the respiratory

difficulty because of slowness of perfusion; better results were obtained when THAM or bicarbonate of soda was administered through the umbilical cord. Assisted ventilation is successful in hypercapnic acidosis, but may lead to infection and often the pH is not altered quickly enough. Of 55 patients treated, 18 were cured. In order to make a complete study of respiratory distress, anoxia and acidosis must both be included. (28 refs.) - *M. Lender.*

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54-Nancy, France

1134 REID, D. H. S. Diffusion anoxia at birth. *Lancet,* 2(7571):757-758, 1968.

Alveolar nitrous-oxide studies in infants do not support the suggestion that apnea at birth is due to diffusion anoxia, but underline the need for caution in the use of nitrous oxide in maternal anesthesia. (8 refs.) *Journal summary.*

Department of Child Health
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Aberdeen, Scotland

1135 Fate of survivors of hyaline-membrane disease. *New England Journal of Medicine,* 279(20):1111, 1968. (Editorial)

The survival of infants, especially those whose birth-weight was over 1,500 grams, with severe hyaline-membrane disease may be enhanced by prolonged assisted ventilation treatment; however, it has been observed that survivors of this disease have more central nervous system damage than normal infants of the same birth weight. Since it is difficult to use affected infants as controls, judicious follow-up records should be kept on survivors of this disorder. (5 refs.) - *M. T. Lender.*

1136 CUSHNER, IRVIN M. Irradiation of the fetus. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 20, p. 378-403.

Radiation can affect the somatic cells of the mother or fetus, and/or affects the hereditary apparatus in the maternal and/or fetal gonads. Animal experimentation on the adverse somatic effects of ionizing radiation indicates that pelvic radiation exposure should be avoided in the postovulatory phase of the menstrual cycle, that both pelvic and nonpelvic exposure should be avoided throughout pregnancy, and that shielding procedures should be used in nonpelvic radiation. Evidence indicates that the genetic effects of radiation on the human fetus can be serious. If the fetus is at an incomplete stage of development the embryonic tissue is especially susceptible to radiation injuries and relatively small doses may lead to congenital malformations, leukemogenesis, and other malignancies. Intrauterine exposure constitutes a total bodily dose for the fetus and thus increases the possibility of far-reaching mutational damage to the fetal germ tissue. The cumulative nature of genetic radiation damage makes dosage an important factor. Physicians should classify X-ray decisions for pregnant women as urgent medical-surgical, urgent obstetrical, and non-urgent. Therapeutic abortions appear to be indicated when maternal illness requires the use of therapeutic doses of external radiation and/or radium delivered to the abdomen or pelvis, and when diagnostic radiologic procedures require excessive radiation doses. (54 refs.) *J. K. Wyatt.*

1137 SCHARER, K., MUHLETHALER, J. P., STETTLER, M., & BOSCH, H. Chronic radiation nephritis after exposure in utero. *Helvetica Paediatrica Acta,* 5(23):489-508, 1968.

After exposure to therapeutic radiation *in utero* during the fourth fetal month a girl developed progressive renal disease, characterized by early proteinuria, hyposthenuria, and glomerulo-tubular insufficiency, resulting in secondary hyperparathyroidism and uremic death at the age of 8 years. Autopsy findings revealed hyalinization of glomerular tufts, tubular atrophy and marked interstitial fibrosis, compatible with the picture of radiation nephritis known from exposure after birth. Additional signs of radiation damage in the reported child included severe somatic and psychomotor retardation, spastic tetraplegia, microcephaly, microphthalmia, nystagmus, skeletal hypoplasia, partial epilation, patchy pigmentations of the skin, ovarian fibrosis, and adrenal hyperplasia. (55 refs.) *Journal summary.*

Department of Pediatrics
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Switzerland

1138 ALEXANDRIS, ATHINA, & LUNDELL, FREDERICK W. Effect of thioridazine, amphetamine and placebo on the hyperkinetic syndrome and cognitive area in mentally deficient children. *Canadian Medical Association Journal*, 98(2):92-96, 1968.

Thioridazine, amphetamine, and placebo were evaluated under double-blind conditions in 21 patients (CA 7 to 12 yrs) who exhibited the hyperkinetic behavior syndrome. The results indicate that all 3 drugs favorably influenced various clinical characteristics of the behavior syndrome. Thioridazine, however, proved to be statistically superior to amphetamine and placebo; amphetamine showed only slight difference from placebo. In addition to observing the influence of the agents on the clinical manifestations of the hyperkinetic syndrome, close attention was paid to their influence on school performances in reading, writing, arithmetic, and class standing. Although thioridazine improved all 4 of these characteristics of school performance, the improvement did not reach statistically significant levels when it was compared to placebo. In addition, the scores of a series of psychological tests did not improve significantly. A possible explanation of these findings is offered. (41 refs.) *Journal summary.*

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1139 JOSEPH, MICHAEL. Heart failure from brain damage. *Developmental Medicine and Child Neurology*, 9(6):772-773, 1967. (Annotation)

Brain damage can be a cause of heart failure in newborn infants. Three full-term newborn infants developed cerebral signs including hypotonia, irritability, convulsions, raised intracranial tension, and absence of sucking, Moro and grasp reflexes preceding and accompanying the cardiac signs. (8 refs.) *J. Snodgrass.*

Department of Pediatrics
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1140 Operation ends equality for Siamese twins. *Medical World News*, 9(22):43, 1968.

Female Siamese twins (birth-weight, 12 lbs 4 oz) joined at the face, abdomen, and sharing 1 massive liver, progressed equally satisfactorily and after 2 months an operation to separate them was performed. During the operation, it was necessary for 1 twin to be placed on the right side; this added difficulty to the task of bringing her liver tissue into position. This twin experienced complications including: bleeding of her liver from severed hepatic sinusoids, necessitating a total of 710 cc of blood (as compared to her sibling's 500 cc); a decrease in venous return; shock; heart arrest; and subsequent pneumonia and intermittent collapse of the lungs. The affected twin survived with the aid of a respirator and, on the twenty-sixth postoperative day, a stomach tube through which high protein liquids were fed. Although the patient overcame other afflictions, she ultimately began to show signs of irreversible brain damage. (No refs.) - *J. P. West.*

1141 RUSSELL, KENNETH R. So what's irreversible? *Staff*, 5(6):14-15, 1968.

A 12-year-old girl, diagnosed as having irreversible brain damage from acute encephalitis and institutionalized, was returned to normal life after a 2-year treatment program which included a research-oriented class and occupational and recreational programs. Prior to her illness, she had been a normal, average student and for this reason she was not placed in a ward for chronic MRs at time of admission, even though she could not speak, eat, or respond to other persons. After several months of treatment, she began to recall portions of her previous life, and within 9 months, her social maturity scale had risen from a low of 7 on the Vineland Social Maturity Scale, to 71. It became apparent that her muteness, withdrawal, and unresponsiveness were due to psychosis and not brain damage. The retrieval of this girl from a life in a ward for chronically brain-damaged patients was due in great part to the intensive treatment given her by staff members. (No refs.) - *G. Trakas.*

Child Research Unit
Colorado State Hospital
Pueblo, Colorado

1142 FISHBEIN, MORRIS. "Patterning" under attack. *Medical World News*, 9(22):80, 1968. (Editorial)

The "patterning" method, introduced in 1955 and presently used in the treatment of approximately 10,000 neurologically handicapped children, is criticized by 10 professional medical and health organizations because of

misleading claims regarding its effectiveness and results. The evidence presented against the patterning (Doman-Delacato) method should warrant hesitation and investigation by physicians and parents of MRs before approving its use. (No refs.) - *J. P. West.*

No address

1143 LEHMAN, CAROL H. Play therapy for the hemiplegic child. *Physical Therapy,* 48(12):1395, 1968.

A technique entitled "going fishing," designed to increase attention span, range of motion, and control in the MR hemiplegic child, is described and illustrated. (No refs.) *J. P. West.*

The Woods Schools and Residential Treatment Center
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1144 JACQUEMAIN, B. Die Kyphose des Spastikers (Kyphosis in cerebral palsied children). *Die Rehabilitation,* 7(4):178-182, 1968.

A strikingly high incidence of excessive curvature indices was found in cerebral palsied children. In these cases, the shape of the anterio-posterior curvature of the dorsal part of the spine was the same as in imbecile children or children with weak posture. Only in a small portion was a relationship stated between the site and degree of damage caused by the paresis. In spite of the pathogenic importance of rickets, the cause of this abnormal posture is to be seen in abnormal reflex-action. Secondarily, a persistent kyphosis develops as a result of insufficiently counter-acting muscle forces. Delayed static-motor development, restricted pulmonal ventilation, and visual disturbances are sequelae of this abnormal posture. Finally, a special corset for the sitting posture is demonstrated; its purpose is not to correct but merely to support the child's spine. (8 refs.) - *Journal summary.*

Orthopadische Klinik
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Wurzburg, West Germany

1145 TARDIEU, G., TARDIEU, C., HARIGA, J., & GAGNARD, L. Treatment of spasticity by injection of dilute alcohol at the motor point or by epidural route: Clinical extension of an experiment on the decerebrate cat. *Developmental Medicine and Child Neurology,* 10(5):555-568, 1968.

The myotatic reflex in decerebrate rigidity is suppressed by applying procaine to the nerve, which does not diminish the response of the muscle to stimulation of the nerve. This effect is due to the selective paralysis of the fusimotor fibers. The authors show that the same selective action can be obtained using 45% alcohol. This has a twofold advantage: histological evidence is favorable; and the alcohol has a prolonged effect. Applying this animal experiment to the treatment of cerebral palsy, the authors succeeded in suppressing the myotatic tonic reflex for several months, and even up to 2 and 3 years. This result is almost invariable, but is never obtained in cases where the myotatic reflex is not involved, although such cases are often also called "spastic." A method of diagnosis and clinical evaluation is described which, if followed correctly, makes it possible to forecast more or less accurately which cases will be improved by injection of alcohol at 45%. The injection may be made at the motor point of the muscle (approximately 1,500 cases) or (since many muscles of the lower limbs have an exaggerated myotatic reflex) epidurally. The latter injection has been carried out in approximately 200 cases and no trouble, in particular with the urinary tract, has resulted. (16 refs.) *Journal summary.*

Institut National de la Sante et Recherche Medicale
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92 Garches, France

1146 NATHAN, P. W. Treatment of spasticity by intraneural injection of alcohol. *Developmental Medicine and Child Neurology,* 9(6):775, 1967. (Annotation)

Intraneural injection of alcohol was found to affect the tonic stretch reflex in cats and to reduce the number of smaller nerve fibers. One hundred ninety children with cerebral palsy received effective relief of spasticity over short and variable periods of time. (1 ref.) - *J. Snodgrass.*

Neurophysiological Clinic
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Yugoslavia

1147 TILL, KENNETH. Hemispherectomy for infantile hemiplegia. *Developmental Medicine and Child Neurology*, 9(6):773-774, 1967. (Annotation)

The historical development, indications, prognosis, morbidity, and mortality of hemispherectomy for infantile hemiplegia are discussed in light of decreasing popularity of the procedure. Improved non-surgical management, including better facilities, a wider range of drugs, and more skilled medical and paramedical help, may have resulted in fewer neurosurgical referrals. (4 refs.)
J. Snodgrass.

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England

Disease or Disorders of Metabolism, Growth, or Nutrition

1148 MOZZICONACCI, P., BOISSE, J., LEMONNIER, A., & CHARPENTIER, C. *Les Maladies Metaboliques des acides amines avec arrieration mentale* (The metabolic maladies of the amino acids with mental retardation). Paris-VI, France, L'Expansion Scientifique, 1968, 393 p. (Price unknown)

The information available about the amino acid pathologies will soon be outdated, but new information is constantly becoming available. The biochemical aspects that are essential for the understanding of amino acid pathology include the basic reactions of decarboxylation, degradation, deamination, and transamination, and are controlled by enzymes. The disorders often are due to the absence of an enzyme required for the synthesis or degradation of the acid. The various intermediates and cofactors that may be involved with faulty metabolism include folic acid, indoles, enzyme blocks, or a general lack or imbalance of an enzyme, cofactor, or intermediate. Amino acid pathology can arise from chromosome aberrations or enzymatic or metabolic faults; it is usually etiologic to MR and treatment by biochemical or other methods is usually without success. The amino acids, which may be considered singly or in groups, based on their chemistry, are known to be associated with scores of pathologies, which can be studied or diagnosed by the resulting urine odor, MR, convulsions, neurological or ocular signs, language troubles, skin irregularities, indications in the blood, or digestive, liver, heart, or developmental disorders. Descriptions of the diseases as they are presently understood, a literature review, and a statement of the relationship of specific conditions to MR may help practitioners to diagnose, study, evaluate, and treat cases of the more common types of pathologies, or some of the less known types, and to give genetic counsel to afflicted families. (1,335 refs.) - *M. T. Lender.*

CONTENTS: Generalities on the Amino Acids; Biochemical and Analytical Bases of the Exploration of the Metabolism of Amino Acids; Pathological Syndromes Linked to Metabolic Disorders of Various Amino Acids; Clinical Diagnosis (Symptomatic Study) and Attempt at Etiological Orientation; and Biological Diagnosis.

1149 EFRON, MARY L. Some experiences with screening for inborn errors of metabolism. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 57-60.

In Massachusetts all newborns are screened for phenylketonuria, and patients at a state school for the MR and others suspected of metabolic disorder have received more comprehensive testing for inborn errors of metabolism. Routine screening with the Guthrie test detected 40 infants (of 400,000 tested) with high phenylalanine levels. One-third of these were judged to be atypical as the blood phenylalanine concentration fell to normal within 1-3 years. Electrochromatographic examination of urine specimens in the state school population revealed 3 new disorders of amino acid metabolism, and many metabolic disorders were found among the blood and urine samples of high risk patients examined at the Massachusetts General Hospital. Physicians in the state are quite receptive to screening programs so that the volume and appropriateness of material referred has resulted in the detection of many patients with metabolic disorders and a gratifying yield of knowledge about human biochemistry. (4 refs.)
E. L. Rowan.

1150 HARRIS, HARRY. Enzyme variation in man: Some general aspects. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress on Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 207-214.

Two or more common alleles at distinct gene foci result in a striking polymorphism of human proteins: enzyme deficiencies in "inborn errors of metabolism"; various blood-group systems; and numerous subtle differences in common enzymes. The relative frequencies of these genetic determinations have led to the erroneous thought that they represent different forms of human variation. When arbitrarily chosen common enzymes were subjected to starch gel electrophoresis, marked polymorphism was noted in red-cell acid phosphatase (3 alleles), phosphoglucomutase (3 different gene loci each with at least 2 common alleles) and adenylate kinase. With polymorphism probable in each protein system, the individual is enzymatically unique; however, the role of each enzyme phenotype in individual and population differences is largely unexplored. (18 refs.) - *E. L. Rowan.*

1151 PERRY, THOMAS L., HANSEN, SHIRLEY, LOVE, DONNA L., CRAWFORD, LOUISE E., & TISCHLER, BLUMA. Treatment of homocystinuria with a low-methionine diet, supplemental cystine, and a methyl donor. *Lancet*, 2(7566): 474-478, 1968.

Plasma-homocystine levels were reduced significantly in 3 children with homocystinuria through the use of a diet providing only 10 mg of methionine/kg body weight/ day, supplemented by L-cystine and large doses of the methyl donor, choline. Pyridoxine had no effect on the biochemical changes in their blood. Reduction of plasma-homocystine may be an important measure for preventing intravascular thromboses in patients who already exhibit the other clinical manifestations of homocystinuria. A 3-year-old child treated for homocystinuria since early infancy with a low methionine diet and supplemental cystine remains mentally and physically normal, thus suggesting the possibility of preventing all of the ill effects of the disease by early diagnosis and dietary therapy. (11 refs.)
Journal summary.

Department of Pharmacology
University of British Columbia
Vancouver 8, Canada

1152 UHLENDORF, B. WILLIAM, & MUDD, S. HARVEY. Cystathionine synthase in tissue culture derived from human skin: Enzyme defect in homocystinuria. *Science*, 160(3831): 1007-1009, 1968.

Fibroblasts derived from normal human skin and from cells in amniotic fluid and grown in tissue culture have cystathionine synthase activity. Skin from homocystinuric patients gives rise to fibroblast lines with normal activities of methionine-activating enzyme, but with very low or undetectable cystathionine synthase activity. Thus, the enzyme lesion in homocystinuria is demonstrable in readily available human cells. Neither cystathionine synthase nor methionine-activating enzyme could be detected in intact normal skin. (14 refs.) - *Journal abstract.*

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1153 RATNOFF, OSCAR D. Activation of Hageman factor by L-homocystine. *Science*, 162(3857):1007-1009, 1968.

L-Homocystine activates Hageman factor, as demonstrated by its capacity to initiate clotting and to induce the evolution of plasma kinins. Perhaps, strategically located deposits of this amino acid are responsible for the unusual frequency of thrombosis in patients with homocystinuria. (14 refs.) *Journal abstract.*

Case Western Reserve University
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1154 PERRY, THOMAS L., HARDWICK, DAVID F., HANSEN, SHIRLEY, LOVE, DONNA L., & ISRAELS, SYDNEY. Cystathioninuria in two healthy siblings. *New England Journal of Medicine*, 278(11):590-592, 1968.

Tests in 2 siblings with cystathioninuria indicated that the disorder is congenital and not secondary. Yet both children enjoy good physical and mental health. Their parents excrete substantial amounts of cystathionine in urine only after methionine loading, and thus appear to be heterozygous for the cystathioninuria gene. It is possible that the mental defect and other serious disorders that have been described in 6 of the 7 previously reported cases of cystathioninuria were coincidental, and in no way the result of the genetically determined deficiency of the cystathionine-cleaving enzyme. Cystathioninuria may prove to be a benign disorder requiring no treatment. (17 refs.) - *Journal abstract.*

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1155 ROSENBERG, LEON E., LILLJEQVIST, ANNE-CH., & HSIA, Y. EDWARD. Methylmalonic aciduria: An inborn error leading to metabolic acidosis, long-chain ketonuria and intermittent hyperglycinemia. *New England Journal of Medicine*, 278(4):1319-1322, 1968.

Developmental retardation, metabolic acidosis, methylmalonic aciduria and intermittent hyperglyinemia were observed in an 8-month-old infant suspected of having an inborn error of metabolism. Butanone, hexanone, and acetone were found in the urine. L-valine or L-isoleucine supplements to dietary protein at 3 gm/kg/day produced ketonuria and ketosis and further increased the amount of methylmalonic acid excretion. An equivalent amount of L-leucine failed to increase methylmalonic acid excretion or to produce ketonuria or ketosis. Plasma glycine levels were variable and had no relation to the clinical or biochemical findings. One mg vitamin B_{12}/day for 52 days produced a significant decrease in methylmalonic acid excretion and supports the hypothesis that the abnormality is a deficiency of methylmalonyl CoA isomerase. (10 refs.) - *D. Plaut.*

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Yale University School of Medicine
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1156 SCOTT, FLORENCE. *Protect from PKU.* Second edition. Portland, Oregon, Oregon State Board of Health, 1968, 58 p. $1.00.

Since a low phenylalanine diet is the only treatment for PKU at the present time, the most favorable results are achieved when a PKU child is supervised by a health team which regularly monitors the serum phenylalanine level, and teaches the mother how to plan and prepare meals which meet both nutritive needs and desires for variety and normalcy. Blood or urine tests are used to screen infants for PKU and the Guthrie test can be used to monitor the effects of a low phenylalanine diet on the blood level. In order to prevent MR, prompt dietary treatment is required. Although many experts believe that dietary treatment should be continued through adolescence, its greatest effects are derived during the first 3 or 4 years of life. The food preparation instructions, menu planning guide, equivalents list, and low phenylalanine recipes included in this book should be of interest to parents of children with PKU. (No refs.) - *J. K. Wyatt.*

1157 HSIA, DAVID YI-YUNG. Phenylketonuria 1967. *Developmental Medicine and Child Neurology*, 9(5):531-540, 1967.

Current widespread screening methods of newborns for phenylketonuria has shown that classical phenylketonuria is not the only cause of hyperphenylalaninemia. Over 90% of cases with moderate hyperphenylalaninemia are associated with marked hypertyrosinemia. Classical phenylketonuria is secondary to an

absence of phenylalanine hydroxylase; phenylketonuria may be due to a transient hyperphenylalaninemia; persistent hyperphenylalaninemia; or hyperphenylalaninemia associated with phenylalanine transaminase deficiency. The frequency of all phenylketonuria discovered in screening tests appears to be about 1/10,000 individuals; however, only about 1/25,000 are actually cases of true phenylketonuria with accompanying MR. Effectiveness of dietary restriction of phenylalanine has not been accurately determined but subjectively appears to cause improvement in intelligence development. Infants with repeated plasma phenylalanine levels greater than 4 mg/100 ml require a complete evaluation and those showing low tyrosine levels with elevated phenylalanine should have dietary control. The responsibility for metabolic disease diagnosis and treatment belongs to the physician and scientist; therefore, further legislation for compulsory testing is not recommended. A controlled study of dietary effectiveness would be extremely helpful. (46 refs.) - *W. Asher.*

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1158 MYERS, HOWARD M., DUMAS, MICHAEL, & BALLHORN, HILDE B. Dental manifestations of phenylketonuria. *Journal of the American Dental Association,* 77(3):586-588, 1968.

A study on 35 ketonuric patients (CA mean 26 yrs; IQ mean less than 30) for malocclusion and enamel defects showed no correlation between phenylketonuria and malocclusion. There was a significantly higher incidence of enamel hypoplasia in the phenylketonuric group as compared to a control group of non-phenylketonuric MRs; however, there was no correlation between the serum phenylalanine levels and the severity of the enamel lesions. (9 refs.) - *M. Drosman.*

School of Dentistry
University of California Medical Center
San Francisco, California 94122

1159 CLAYTON, BARBARA, MONCRIEFF, ALAN, & ROBERTS, G. E. Dietetic treatment of phenylketonuria: A follow-up study. *British Medical Journal,* 3(5558):1333-1336, 1967.

Dietary treatment of 31 male and 26 female children with phenylketonuria has been assessed with regard to intelligence testing, effects of treatment, and physical progress. Criteria for dietary treatment were based on chronological age and IQ. Methods for assessing intelligence included the Griffiths, Stanford-Binet, Merrill-Palmer, and Wechsler tests. Trial treatment with testing is suggested in borderline cases, and treatment should be continued as long as patients show EEG intolerance to phenylalanine load. No retardation of physical growth was noted in the treated group. Best results were obtained when treatment was instituted early but some older children also had good results which enabled them to attend special or normal schools. Fifteen of 18 epileptic children responded poorly to dietary treatment. (8 refs.) - *W. Asher.*

The Hospital for Sick Children
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London W. C. 1, England

1160 HATTORI, H. Electroencephalographic investigations during phenylalanine treatment of rats and rabbits. *Journal of Mental Deficiency Research,* 12(1):47-53, 1968.

Phenylalanine treatment of 40 rats and 8 rabbits demonstrated a significant decrease in the Metrazol thresholds as measured by EEGs. The rats were fed a diet supplemented with 6% L-phenylalanine and 2% D-phenylalanine. Recordings of the EEG were made each 2 or 3 days for 10 days. The rabbits were given intraperitoneal injections of 40 ml of 2.5% phenylalanine daily for 20 days. Baseline EEG recordings were frequently taken during the first 10 days. Results showed no change in the resting EEG patterns of the rats and rabbits with phenylalanine loading. These were followed by recordings taken during the injection of Metrazol at a rate of 5 mg/ml every 30 seconds until convulsions were produced. The Metrazol threshold of the 3-month-old experimental rabbits was significantly reduced on the tenth and twentieth days when compared to the control group. These results might explain the development of EEG abnormalities and convulsive seizures observed in phenylketonuric patients. (5 refs.) *W. Asher.*

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1161 NIGAM, MOOL P., *WATSON, WESLEY, & MARCUS, ELLIOTT M. Electroencephalographic effects of L-phenylalanine in the cat. *Archives of Neurology*, 18(2):191-195, 1968.

Abnormal cerebral electrical activity was directly related to elevated plasma phenylalanine levels induced in cats which had intact nervous systems. Seventeen cats were given phenylalanine intravenously in dosages of 50 or 100 mg/kg at 15- or 30-minute intervals; 3 control animals received equivalent volumes of normal saline. Serum phenylalanine levels were determined and spontaneous and light-evoked cerebral activity was recorded at fixed intervals. EEG abnormalities consisting of seizure discharges and generalized slowing were observed in the 13 animals with plasma phenylalanine levels above 18.1 mg/100 ml. No EEG changes were noted in the controls and in the 4 cats with plasma phenylalanine levels below 12.1 mg/100 ml. No striking EEG change occurred in any of the animals in response to photic stimulation. (23 refs.) - *A. Huffer.*

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171 Harrison Avenue
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1162 KERR, GEORGE R., CHAMOVE, ARNOLD S., HARLOW, HARRY F., WAISMAN, HARRY A. "Fetal PKU": The effect of maternal hyperphenylalanemia during pregnancy in the rhesus monkey (Macaca mulatta). *Pediatrics*, 42(1): 27-36, 219-220, 1968.

Four rhesus monkeys, maintained on a diet containing added phenylalanine during 9 pregnancies, delivered infants at least 1 standard deviation (SD) below average in birth-weight, with elevated serum levels of both tyrosine and phenylalanine. The experimental animals gained weight poorly and showed elevated levels of serum phenylalanine which varied directly with the amount of phenylalanine in the diet. At 2-week intervals during the pregnancy, blood samples were taken for phenylalanine determination. At delivery blood samples from both mother and infant were taken for free amino acid determination. In evaluation of the infant's learning, 2 types of object discrimination problems and 2 delayed response tests were used. On 1 discrimination problem a significant difference in learning between tests and controls was found. MR appears in a majority of children of PKU mothers; however, no demonstrable metabolic disorder can be established. It is hypothesized from this study that a normal placental metabolic maintenance of higher amino acids in fetal blood malfunctions and allows higher and higher fetal levels of free amino acids which results in damage to the rapidly developing fetal brain. (26 refs.) *D. Plaut.*

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1163 MARKS, J. F., BAUM, J., KAY, J. L., TAYLOR, W., & CURRY, L. Amniotic fluid concentrations of uric acid. *Pediatrics*, 42(2):359-361, 1968.

To provide base-line data for the early diagnosis of hyperuricemia (Lesch-Nyhan syndrome) uric acid levels were determined for 12 serum samples and 23 amniotic fluid samples obtained by amniocentesis from mothers, most of whom had a history of Rh incompatibility, and for cord samples from 81 randomly selected premature and full-term infants. Mean uric acid levels were 3.84, 5.75, and 4.53 mg/100 ml, respectively, for the serum, amniotic fluid, and cord samples. In comparison, a 1-day-old infant with the Lesch-Nyhan syndrome had a uric acid level of 19 mg/100 ml. Presently, there is no effective therapy for the Lesch-Nyhan syndrome, but when one becomes available, an *in utero* test may be a valuable diagnostic technique. (6 refs.) - *A. Huffer.*

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1164 MARKS, JAMES F., BAUM, JOHN, KEELE, DOMAN K., KAY, JACOB L., & MacFARLEN, ALICE. Lesch-Nyhan syndrome treated from the early neonatal period. *Pediatrics*, 42(2): 357-359, 1968.

The spasticity, self-mutilation, and MR associated with the Lesch-Nyhan syndrome could not be prevented in a neonate whose treatment with allopurinol began at 4 days of age. Since familial hyperuricemia was suspected, uric acid levels were determined immediately. The S appeared normal at birth, but at 24 hours of age, the serum uric acid level was 18.9 mg/100 ml. On the fourth day treatment was begun with allopurinol at 40 mg/day. A gradual increase in the dosage to 700 mg/day was needed to keep the uric acid levels normal. Slow development was noted at 3 1/2

months, and bucal and lip biting at 6 months, followed by spasticity and athetosis. The progressive neurologic symptomatology developed in spite of the maintenance of normal uric acid levels. (7 refs.) - *A. Huffer.*

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1165 PERRY, THOMAS L., HARDWICK, DAVID F., LOWRY, R. BRIAN, & HANSEN, SHIRLEY. Hyperprolinaemia in two successive generations of a North American Indian family. *Annals of Human Genetics,* 31(4):401-407, 1968.

The study of 21 members of a Shuswap Indian family in central British Columbia revealed hyperprolinemia in 2 generations and hereditary renal disease in 3 generations. The pattern of inheritance was consistent with an autosomal recessive deficiency of proline oxidase resulting in markedly elevated levels of fasting plasma proline in homozygotes and moderately elevated levels in heterozygotes. All 3 generations displayed microscopic hematuria on random urinalyses. Although the propositus also had a Wilm's tumor and MR, other patients with Wilm's tumor did not have an elevated plasma proline and a sibling of the propositus had MR and a normal plasma proline, suggesting that these other characteristics are not part of the hyperprolinemic syndrome. Of the 2 previously reported families with hyperprolinemia, 1 had a pattern of hearing loss which was not found in this family, and the other had photogenic epilepsy which again was not confirmed although there were 3 abnormal EEGs in the Shuswap group. (6 refs.) - *E. L. Rowan.*

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1166 CROUGHS, W., SCHOPMAN, W., & TIDDENS, H. A. W. M. Plasma growth hormone response to insulin induced hypoglycemia. *Helvetica Paediatrica Acta,* 23(5):464-477, 1968.

The insulin tolerance test and the plasma growth hormone (GH) response to insulin induced hypoglycemia have been studied in 7 normal children, 26 children with short stature (9 hypopituitary), 5 obese children, and 2 children with ketotic hypoglycemia. Generally, an intravenous test dose of 0.05 U insulin/kg body-weight was used. Although only about 1/2 of the children showed a 50% drop of blood glucose, in 14 out of 16 children with nonendocrine short stature, maximal plasma GH level during the test was about 10 ng/ml. In 7 children with idiopathic GH deficiency, maximal plasma GH level remained below 5 ng/ml. Plasma GH response to hypoglycemia in obese children was absent or very slight, even when a 50% drop of blood glucose was obtained after an intravenous test dose of 0.1 U insulin/kg body-weight. Increased insulin sensitivity and unresponsiveness of blood glucose to hypoglycemia were found in children with panhypopituitarism, in some children with nonendocrine growth retardation and in the 2 children with ketotic hypoglycemia. To explain the contradictory findings in the literature of normal responsiveness of blood glucose to hypoglycemia in children with GH deficiency without deficiency of ACTH or TSH and hypoglycemia unresponsiveness in the same group of children and in sexual ateliotics with isolated GH deficiency, insulin studies might be elucidating. (30 refs.) - *Journal summary.*

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1167 BRODEHL, J., GELLISSEN, K., HAGGE, W., & SCHUMACHER, H. Reversibles renales Fanconi-Snydrom durch toxisches Abbauprodukt des Tetrazyklins (Reversible renal Fanconi syndrome from a toxic degradation product of tetracycline). *Helvetica Paediatrica Acta,* 23(4):373-383, 1968.

A 3 1/2-year-old girl developed an acute renal Fanconi syndrome with phosphate diabetes, renal glucosuria, and hyperaminoaciduria. Additionally, a reduction of the glomerular filtration and PAH clearance could be demonstrated. The hyperaminoaciduria was generalized and the percentual tubular reabsorption of some amino acids was reduced to less than 60%. The symptoms of the Fanconi syndrome disappeared spontaneously within a few weeks. After 4 months, no renal defect could be demonstrated with the exception of a slight reduction of the inulin and PAH clearance. The Fanconi syndrome was caused by ingestion of degraded (outdated) tetracycline. The girl had received a total amount of 2.75 g of tetracycline about 1 week before onset of the symptoms. In the remaining drug approximately 50% of the tetracycline was degraded to anhydro-tetracycline. (27 refs.) - *Translated journal summary.*

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1168 HOOFT, C., CARTON, D., SNOECK, J., TIMMERMANS, J., ANTENER, I., VAN DEN HENDE, CH., & OYAERT, W. Further investigations in the methionine malabsorption syndrome. *Helvetica Paediatrica Acta,* 23(4):334-349, 1968.

The clinical and biochemical condition of an earlier described patient with methionine malabsorption syndrome was evaluated 2 1/2 years after dietary methionine restriction was started. The clinical symptoms as diarrhea, convulsions, and peculiar smell subsided. The child remains mentally very retarded. A methionine loading test, performed 4 years after the first investigation resulted,to some degree, in the biochemical peculiarities as seen in the full blown disease: urinary excretion of α-hydroxybutyric acid, an increase of the stool weight, an increased excretion of α-hydroxyacids, and the appearance of α-hydroxybutyric acid in the stools and urine. An important aspect of this attenuation of the abnormalities with growing older is that at a certain stage of the disease, the latter will only be revealed by loading tests. In both parents and 10 siblings of the patient with methionine malabsorption an extensive investigation was performed. The figures of the excretion aof aminoacids, α-hydroxybutyric acid and ketoacids in urine and stools, before and after a methionine loading, are communicated. The most striking biochemical abnormality was the pathological excretion of α-hydroxybutyric acid, after a methionine loading, in 5 members, among them both parents, suggesting the genetic character of the affection. (11 refs.) - *Journal summary.*

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1169 *Wilson's Disease.* In: *Birth Defects Original Article Series,* Volume 4, Number 2, New York, New York, The National Foundation, 1968, 138 p. $10.00.

Original papers dealing with research and clinical management of Wilson's disease (hepatolenticular degeneration) are collected to provide a summary of what is currently known and under investigation regarding the disease. The work of 36 authors representing 17 centers in 7 countries is included in this volume which grew out of the Second International Symposium on Wilson's Disease held in Tokyo in 1966. Emphasis is placed on the elucidation of copper metabolism in animals, normal humans, and those with Wilson's disease. Genetic, pathologic, psychiatric, neurologic, and general medical aspects are presented. Therapeutic results, especially with penicillamine, are presented and the need to identify asymptomatic cases for early treatment is stressed. These articles should be of interest to internists and pediatricians who treat Wilson's disease and to biochemists and other researchers in the field. (355 refs.) - *D. Martin.*

CONTENTS: Copper Metabolism; Genetics; Central Nervous System; Liver; Kidney; Diagnosis in Asymptomatic Patients; and Treatment.

1170 OWEN, CHARLES A., & HAZELRIG, JANE B. Copper metabolism in the rat. *Birth Defects Original Article Series,* 4(2):1-7, 1968.

Kinetics of copper transfer between red cells, plasma, liver parenchyma, and bile were studied in rats and in isolated, perfused rat liver by using varying concentrations of ^{64}Cu labeled cupric acetate, and the data suggested a 3-compartment model for hepatic handling of copper. From 1 compartment of the model, copper was rapidly excreted into the bile, while in the second ceruloplasmin synthesis occurred at a relatively slower rate, and in the third compartment copper was stored. Copper concentration in several organs rose only after the appearance of ceruloplasmin suggesting that it serves as copper-donor to the tissues. (9 refs.)
D. Martin.

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1171 SILVERBERG, MERVIN, NEUMANN, PETER Z., & ROTENBERG, A. DANIEL. The role of amino acids in physiologic and pathologic copper transport: In vitro and in vivo studies. *Birth Defects Original Article Series,* 4(2): 8-13, 1968.

The passage of ^{64}Cu labeled cupric acetate across both inert and metabolically active membranes was facilitated when amino acids were present in physiological amounts, particularly histidine. Studies on human and rat liver slices and human erythrocytes indicated that maximum copper transfer occurred in the presence of amino acid complexes containing histidine and glutamine, and that histidine

potentiated copper transport into normal liver slices as well as slices from patients with either cirrhosis or Wilson's disease. In the latter, a 40-50% reduction in copper absorption was found, and it was thought that this might represent either a basic defect in copper transport or saturated hepatocellular binding sites. (6 refs.) - *D. Martin.*

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1172 FARRER, PAUL A., & MISTILIS, STEPHEN P. Copper metabolism in the rat: Studies of the biliary excretion and intestinal absorption of ^{64}Cu-labeled copper. *Birth Defects Original Article Series,* 4(2):14-22, 1968.

Evidence indicating that biliary copper is excreted in a protein-bound form other than ceruloplasmin which becomes progressively less dialyzable and less available for intestinal reabsorption was obtained using both ^{64}Cu labeled cupric acetate and Cu (II) EDTA given either intravenously or intrapylorically to rats. This suggests a progressive change in the copper-containing moiety which maintains normal copper balance by preventing intestinal reabsorption, and failure of this mechanism could be related to excessive hepatic accumulation of copper in Wilson's disease. (25 refs.) - *D. Martin.*

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1173 PORTER, HUNTINGTON. Copper proteins in brain and liver in normal subjects and in cases of Wilson's disease. *Birth Defects Original Article Series,* 4(2):23-28, 1968.

Copper proteins from liver and brain in cases of hepatolenticular degeneration are contrasted with those isolated from normal adult brain and adult and newborn liver. Significant portions of the abnormally elevated copper proteins in liver tissue of 2 patients with Wilson's disease were found in detergent-insoluble, mitochondrial fractions, part of which could be similar to newborn hepatic mitochondrocuprein. The pathologic copper in brain tissue of 5 cases of Wilson's disease was bound to a number of normally copper-free proteins found in the subcellular soluble fraction. These findings together with the clinical pattern of Wilson's disease suggest that excess copper might possibly form different copper-protein combinations at various stages of the illness with renal, hepatic, and cerebral deficits developing as normal enzymatic functions are inhibited. (21 refs.) *D. Martin.*

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1174 TERAO, TERAO, OGIHARA, KAZUTERU, & MOZAI, TOSHIJI. Studies on copper metabolism in Wilson's disease. *Birth Defects Original Article Series,* 4(2):29-34, 1968.

Six patients with Wilson's disease were compared to 6 normal and 2 cirrhotic controls following oral administration of ^{64}Cu labeled cupric chloride, and plasma uptake exhibited a slightly higher, more sustained primary peak but no normal secondary rise in the cases of Wilson's disease, with the copper reacting directly as opposed to that of the controls which became increasingly more indirect. Radioactivity in cases of Wilson's disease was higher over the head, thigh, and calf, and lower over the liver than in controls; erythrocytic uptake of copper was lower in 3 of 5 patients with Wilson's disease. Penicillamine was effective in reducing both plasma copper levels and copper retention when started before the copper, but it did not reduce copper retention when administered after the copper. (15 refs.) - *D. Martin.*

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1175 WATTEN, RAYMOND H., TU, JUN-BI, BLACKWELL, R. QUENTIN, & HOU, TSUNG-YUNG. Contributions of copper balance studies to investigation and management of Wilson's disease. *Birth Defects Original Article Series,* 4(2):35-40, 1968.

Copper balance studies indicated that while a daily dietary intake of 1.2 mg of copper resulted in a negative copper balance in a normal adult, an intake of less than 0.6 mg was necessary to prevent positive balance in 3 patients with Wilson's disease. The relative effectiveness of diethyldithiocarbamate, DL-penicillamine, potassium sulfide, and the latter 2 in combination as copper-removing

agents was evaluated on an S with Wilson's disease; the combination was found most effective in increasing both urinary and fecal copper excretion. A mother of 4 children affected with Wilson's disease was found to have low ceruloplasmin and total plasma copper but only a slight tendency toward positive copper balance which indicated that this factor might differentiate between heterozygous and homozygous individuals. A simplified method of estimating copper balance is described. (31 refs.) - *D. Martin.*

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Research Unit Number 2
Taipei, Taiwan
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1176 OSBORN, SIDNEY B., & WALSHE, JOHN M. Studies with radiocopper (^{64}Cu and ^{67}Cu): A distinction between the hepatic and neurologic stages of Wilson's disease. *Birth Defects Original Article Series,* 4(2):41-44, 1968.

Analysis of results from 117 studies with intravenously administered radiocopper on 33 patients with Wilson's disease, 11 heterozygotes, and 42 controls indicates that in the early hepatic stage of the disorder copper concentrates more readily in the liver while in the later neurologic stages, presumably because the liver is saturated with copper, spillage into plasma and other tissues occurs and produces the classical picture of Wilson's disease. D-penicillamine given before a radiocopper injection greatly reduced liver uptake and increased urinary excretion in both a normal control and 6 patients in varying stages of Wilson's disease. It is suggested that the liver might in time recover its ability to concentrate copper if long-term, energetic penicillamine therapy is given. (6 refs.) - *D. Martin.*

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1177 TAUXE, W. NEWLON, GOLDSTEIN, NORMAN P., GROSS, JOHN B., & RANDALL, RAYMOND V. Turnover studies of intravenously administered radiocopper in patients with Wilson's disease: Effect of D-penicillamine therapy. *Birth Defects Original Article Series,* 4(2):45-48, 1968.

Differences in the handling of injected radiocopper were found among 13 patients with Wilson's disease suggesting that the availability of hepatic binding sites is high in presymptomatic individuals and that signs and symptoms emerge only when the sites become saturated. Patients were divided into 4 groups: preclinical before therapy; symptomatic before therapy; D-penicillamine therapy underway; and long-term therapy discontinued. Studies were conducted on 13 experimental Ss at yearly intervals and results compared to those of 18 normal controls. D-penicillamine produced a rapid efflux of injected radiocopper but liver counts remained high in symtomatic cases suggesting that copper removal is a slow process. (5 refs.) - *D. Martin.*

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1178 SHIMIZU, MITIYUKI. Ceruloplasmin as a controlling factor of the hematopoietic system. *Birth Defects Original Article Series,* 4(2):49-53, 1968.

Intramuscular injections of ceruloplasmin, folic acid, and vitamin B_{12} in combination daily for 16 weeks to rabbits produced significant increases in plasma erythropoietin as measured by erythrocytic incorporation of radioiron in rats given pooled plasma from the treated rabbits. Associated findings in the rabbits included decreased serum iron and increased serum iron binding capacity, serum ceruloplasmin, copper, hemoglobin, and reticulocyte and red cell counts. Similar effects did not follow control injections of ceruloplasmin, folic acid, vitamin B_{12}, γ-globulin, or saline, nor vitamin B_{12} with either ceruloplasmin or folic acid. (11 refs.) *D. Martin.*

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1179 ARIMA, MASATAKA, & SANO, ISAMU. Genetic studies of Wilson's disease in Japan. *Birth Defects Original Article Series,* 4(2): 54-59, 1968.

Studies on 151 patients with proved Wilson's disease from 126 Japanese families and 61 deceased siblings of the patients whose histories indicated probable Wilson's disease revealed: that predominant findings in cases discovered earlier were hepatic and deaths were earlier; that in cases with later onset, neurologic symptoms predominated and deaths were later; and that among affected siblings, ages at onset and death were significantly similar. Family background and consanguineous

marriage between parents were found to be related to development of Wilson's disease, but evidence for autosomal dominant or sex-linked recessive types or 2 or more mutant genes associated with the disorder was not found. The existence of a modifying gene was suggested and a pedigree of families living on a small, isolated island with several cases of Wilson's disease was presented. (11 refs.) *D. Martin.*

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1180 TAUXE, W. NEWLON, GOLDSTEIN, NORMAN P., RANDALL, RAYMOND V., & GROSS, JOHN B. Copper metabolism in carriers of Wilson's disease: Analysis of kinetics of intravenously injected radiocopper as a means of detecting the carrier state. *Birth Defects Original Article Series,* 4(2):60-63, 1968.

Metabolic turnover studies using ^{64}Cu labeled cupric acetate were performed on 13 persons heterozygous for Wilson's disease and 18 normal controls, and although initial plasmatic disappearance rates and liver uptakes were not significantly different, the 2 groups were readily distinguished by longer hepatic retention, slower plasmatic reappearance rates, lower fecal excretion, and longer whole-body retention of the radiocopper by the heterozygous carriers. Using these parameters, 7 siblings of persons with Wilson's disease were separated into categories of probable carriers and probable normals. (5 refs.) - *D. Martin.*

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1181 SHIRAKI, HIROTSUGU. Comparative neuropathologic study of Wilson's disease and other types of hepatocerebral disease. *Birth Defects Original Article Series,* 4(2): 64-73, 1968.

Autopsy findings from 15 cases of Wilson's disease were compared to 26 cases of other hepatocerebral diseases comprised of 9 Inose types, 8 pseudoulegyric types, and 9 ischemic types; 98 cases of hepatic failure, and 96 controls, and the characteristics of the non-Wilson hepatocerebral diseases were described. Findings usually characteristic of Wilson's disease include Opalski cells, Alzheimer type I glial nuclei, necrosis or atrophy of the putamen, and copper granules in the liver. Findings common to Wilson's disease and the other hepatocerebral diseases include Alzheimer type II glial nuclei and spongy cortical degeneration with inactive cleaning and organizing processes. Abnormal accumulations of astrocytic glycogen granules were characteristic of the non-Wilson hepatocerebral disease but were seen in only 4 cases of Wilson's disease which had been characterized by predominant abdominal manifestations only. Thirty-three photomicrographs of pathological sections are included. (23 refs.) *D. Martin.*

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1182 INOSE, TADASHI. Neuropsychiatric manifestations in Wilson's disease: Attacks of disturbance of consciousness. *Birth Defects Original Article Series,* 4(2):74-76, 1968.

Case histories of 3 patients with Wilson's disease are used to illustrate how disturbed behavior, personality changes, and mood disorders including depression and manic excitation may appear during the clinical course of the illness and precede neurological signs. Disturbances of consciousness such as delirium and coma are often predominant terminal symtoms. Neuropathologic investigation of the cases did not yield specific information about the pathogenesis of the psychic disturbances, but hepato-portal-systemic shunting of blood with hyperammoniemia might be implicated. (6 refs.) - *D. Martin.*

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1183 GOLDSTEIN, NORMAN P., EWERT, JOSEPHINE C., RANDALL, RAYMOND V., & GROSS, JOHN B. Psychiatric aspects of Wilson's disease: Results of psychometric tests during long-term therapy. *Birth Defects Original Article Series,* 4(2):77-84, 1968.

Intelligence tests were given to 8 adults with Wilson's disease before and during long-term dietary and penicillamine therapy, and the group as a whole showed gradual IQ improvement with marked improvements in some individuals. Over 12 years, 15 adults and 2 children received psychometric tests including the appropriate Wechsler Intelligence Scale (WAIS or WISC), the Wechsler Memory

Scale (WMS), the Bender-Gesalt (BG), the Shipley-Hartford (SH), and the Minnesota Multiphasic Personality Inventory. The 8 adults tested both before and during therapy showed improvement on the information, comprehension, similarities, verbal scale IQ, and block design parts of the WAIS, the WMS, the concept formation, and overall IQ scores on the SH, and on the BG. One of the children was regarded as MR and possibly psychotic, and showed progressive deterioration in IQ despite neurological improvement with treatment. Of 22 patients seen during the 12 years, 9 were considered to have psychiatric diagnoses, and 5 of these showed improved psychiatric status during treatment. (No refs.) - *D. Martin.*

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1184 SCHEINBERG, I. HERBERT, STERNLIEB, IRMIN, & RICHMAN, JOSEPH. Psychiatric manifestations in patients with Wilson's disease. *Birth Defects Original Article Series,* 4(2):85-87, 1968.

Thirty of 49 patients with Wilson's disease were found by clinical interviews and psychometric tests to have significant psychiatric problems as well as neurological signs, and in 13 cases psychiatric disturbances were initial manifestations of the disorder. Poor impulse control, antisocial behavior, affective disorders, and intellectual deterioration were common. Nine of the patients were diagnosed psychotic and 14 had a psychiatric hospitalization. Treatment regimens based on penicillamine produced neurological improvement in 25 of the 30 patients, definite psychiatric improvement in 14, and some psychiatric improvement in 4. No emotional or intellectual problems were encountered in 6 patients who were under 12 at the start of treatment. Psychiatric problems in Wilson's disease are probably reactions to the seriousness of the illness and/or results of copper toxicity. Screening tests for Wilson's disease are recommended for all mentally ill patients seeking medical care. (18 refs.) *D. Martin.*

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1185 SHIKATA, TOSHIO. Morphogenesis of liver cirrhosis in Wilson's disease. *Birth Defects Original Article Series,* 4(2): 88-91, 1968.

Autopsy and biopsy studies in 19 cases of Wilson's disease revealed 3 pathological stages of liver disease, and similar changes were produced in animals under experimental conditions. Stage 1 involved periportal fibrosis or monolobular cirrhosis which was approximated in rabbits by long-term feeding of copper sulfate. Stage 2 consisted of submassive necrosis with parenchymal regeneration which was reproduced in rats by injecting a copper-albumin complex which caused renal tubular degeneration and then giving water with 0.3% copper sulfate for 1 week, followed by a second copper-albumin injection. Postnecrotic cirrhosis similar to that of stage 3 was produced in rats by combinations of injected copper and either a protein-deficient diet or injections of antikidney serum to produce albuminuria. Supplementing the rats' diets with methionine prevented liver necrosis, suggesting that both copper-induced renal damage leading to thiol-containing amino acid deficiency and the toxic effect of copper on the liver combine to produce stage 2 changes in humans. (6 refs.) - *D. Martin.*

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1186 STERNLIEB, IRMIN. Characterization of the ultrastructure changes of hepatocytes in Wilson's disease. *Birth Defects Original Article Series,* 4(2):92-98, 1968.

Liver biopsies from 10 patients with various stages of Wilson's disease were studied by electron microscopy, and although a number of ultrastructure abnormalities were found, none were specific. Ss ranged in CA from 3 to 36 years, 5 had characteristic clinical findings while 5 were asymptomatic, and 2 patients in each group were untreated prior to biopsy. Pathologic findings included nuclear glycogen inclusions, enlarged and misshapen mitochondria, cytoplasmic vacuoles containing lipid material, autophagic vacuoles, prominent lipofuscin granules, many of which had copper deposits, lipocytes and increased collagen in Disse's space, and widened spaces between hepatocytes with microvilli on contiguous membranes. Four electron micrographs are reproduced. (17 refs.) - *D. Martin.*

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1187 SHERLOCK, SHEILA, McINTYRE, NEIL, CLINK, HUGH M., LEVI, A. JONATHAN, & CUMINGS, JOHN N. Hemolytic anemia in Wilson's disease. *Birth Defects Original Article Series,* 4(2): 99-102, 1968.

Three children with Wilson's disease who presented with acute hemolytic episodes accompanied by high urinary copper excretion are described, and it is suggested that a sudden release of tissue copper caused the hemolysis as is known to occur in enzootic jaundice in sheep. In each patient the diagnosis of Wilson's disease and hemolysis were confirmed by hematologic and copper studies, and findings indicated that the excess copper came from sources other than hemolyzed erythrocytes. The possible mechanisms whereby copper might cause hemolysis include inhibition of glycerol transfer into erythrocytes and lowering the level of reduced glutathione. Clinicians should be alert to the fact that hemolysis may be a presenting feature of this disorder. (12 refs.) - *D. Martin.*

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1188 YOSHITOSHI, YAWARA, ODA, TOSHITSUGU, YAMANE, YOSHIJI, NAGASE, MITSUMASA, MORI, KAZUO, & SHIKATA, TOSHIO. Renal lesions in Wilson's disease. *Birth Defects Original Article Series,* 4(2):104-108, 1968.

Renal changes consisting of marked fat deposition and hydropic changes in proximal convoluted tubules were found in autopsy specimens from 7 of 18 patients with Wilson's disease, and similar lesions were produced in rats by combined long-term feeding of copper and intraperitoneal glutathione injections. No renal lesions were seen in Wilson's disease cases of the cerebral type except in 1 patient who had received glutathione. Similar lesions were present in controls with fulminant hepatitis or postnecrotic cirrhosis and bilirubin was suggested as the etiologic agent. Rat studies indicated that glutathione-chelated copper was trapped in the proximal convoluted tubules, even when probenecid was added to inhibit tubular reabsorption, and that copper intoxication increased urinary excretion of asparagine, glycine, cysteine, and total amino-nitrogen. (9 refs.) - *D. Martin.*

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1189 KINNEY, VENARD R., RANDALL, RAYMOND V., ROSEVEAR, JOHN W., TAUXE, W. NEWLON, & GOLDSTEIN, NORMAN P. Calcium studies in Wilson's disease. *Birth Defects Original Article Series,* 4(2):109-113, 1968.

Calcium excretion and absorption following oral tracer doses of radiocalcium were studied on 10 patients with Wilson's disease to evaluate whether hypercalciuria, present in 8 of the 10, was related to increased intestinal absorption of calcium. Tests were conducted 48 times for periods of 2 weeks to 2 months during 3 years. Two normocalciuric patients had normal absorption on 9 tests, while hyperabsorption was seen in 3 of 8 tests on 2 patients with hypercalciuria. Five of the remaining 6 patients became normocalciuric and the sixth approached this during the 3 years. In 5 of these, calcium absorption returned to normal before hypercalciuria, suggesting that the gastrointestinal disorder was primary. Reliability of excretory measurements was verified by whole-body monitoring of radioactivity after intravenous administration of radiocalcium to 4 of the patients. (11 refs.) *D. Martin.*

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Rochester, Minnesota 55901

1190 TU, JUN-BI, BLACKWELL, R. QUENTIN, FRESH, JAMES W., & WATTEN, RAYMOND H. Diagnosis and treatment studies of patients in asymptomatic stage of Wilson's disease. *Birth Defects Original Article Series,* 4(2): 114-121, 1968.

Determinations of serum transaminases, plasma ceruloplasmin or copper oxidase, and 24-hour urinary copper before and during penicillamine administration were done on siblings of patients with Wilson's disease, and the urinary copper during penicillamine treatment was the most useful in distinguishing 12 heterozygotes from 3 homozygous but asymptomatic children. Those with 1 or more abnormal results on the screening tests were further evaluated by liver biopsies and copper balance studies. The test results and clinical courses of the 3 asymptomatic cases of Wilson's disease are reviewed, and it is recommended that the screening procedures be done on all high-risk Ss so therapy can be instituted before symptoms and irreversible changes occur. (38 refs.) - *D. Martin.*

Kingston General Hospital
Kingston, Ontario, Canada

1191 STERNLIEB, IRMIN, & SCHEINBERG, I. HERBERT. The detection of Wilson's disease and the prevention of the clinical manifestations in apparently healthy subjects. *Birth Defects Original Article Series*, 4(2): 122-125, 1968.

Low or absent serum ceruloplasmin and elevated hepatic copper were the key indications of latent Wilson's disease in 48 asymptomatic siblings and children of patients with manifest Wilson's disease, and treatment based on penicillamine prevented significant hepatic or neurologic abnormalities in 40 cases while definite Wilson's disease appeared in 7 of 8 untreated cases with death occurring in 5. The 40 treated patients remained well during observation over a total of 135 patient-years, while the deaths in the untreated group occurred within 1 to 6 years after diagnosis, thereby establishing the need for prophylactic treatment in asymptomatic cases. Tests that did not give reliable diagnostic information included urinary copper (significantly elevated in only 22 of 34 cases), histochemical staining of liver tissue for copper (negative in 9 of 14 cases), urine for abnormal amino acids (present in only 4 of 14 cases), and serum uric acid (normal in all 9 patients tested). Liver biopsies from 34 Ss likewise did not show diagnostic histopathological changes in at least 5 cases. (29 refs.) - *D. Martin.*

Department of Medicine
Bronx Municipal Hospital Center
Bronx, New York

1192 WALSHE, JOHN M. Some observations on the treatment of Wilson's disease with penicillamine. *Birth Defects Original Article Series*, 4(2):126-129, 1968.

Good results were achieved with penicillamine treatment in 28 of 33 patients with Wilson's disease during an 11-year period; deaths in the other 5 cases were due to inadequate treatment (1 case), disease too advanced before treatment started (2 cases), and severe drug reactions preventing adequate dosage (2 cases). The usual dose was 35 mg/kg and foods with high copper content were proscribed. With adequate treatment, serum transaminase levels returned to normal and abnormal copper stores were reduced as evidenced by biochemical studies and disappearance of Kayser-Fleischer corneal rings. During long-term therapy some patients developed chronic thrombocytopenia and 1 of 19 Ss studied had pyridoxine depletion, but there were no indications that copper deficiencies were produced. (9 refs.) - *D. Martin.*

Department of Investigative Medicine
University of Cambridge
Cambridge, England

1193 LANGE, JOACHIM. Long-term treatment of Wilson's disease with D-penicillamine. *Birth Defects Original Article Series*, 4(2): 130-133, 1968.

Good results were achieved in treating 12 patients with manifest Wilson's disease and 6 with asymptomatic disease with a regimen of 0.9 to 1.35 gm penicillamine daily, 20 mg potassium sulfide with meals, and low copper diet. Patients ages ranged from 3 to 26 years. One death occurred among the 12 symptomatic cases, but the other 11 experienced moderate to marked improvements in neurologic status and hepatic function, and diminution of Kayser-Fleischer corneal rings occurred in 4 cases. Better results were achieved when early diagnosis and treatment were possible, and no signs of Wilson's disease appeared in the 6 asymptomatic cases during periods of treatment ranging from 2 to 5 years. (15 refs.) - *D. Martin.*

Department of Internal Medicine
University of Bonn
Bonn, Germany

1194 BOUDIN, G., & PEPIN, B. Our experience in the treatment of Wilson's disease with penicillamine and sodium diethyldithiocarbamate. *Birth Defects Original Article Series*, 4(2):134-135, 1968.

Ten patients with Wilson's disease were given penicillamine in daily doses averaging 1 gm and, while treatment resulted in improvement or arrest of central nervous system manifestations, liver disease was much less influenced. Therapy was hampered by the development of nephrotic syndrome in 2 cases; the renal complications occurred in patients receiving DL-penicillamine which is more toxic to the kidneys than D-penicillamine. The first of these patients died of fulminating hematemesis during corticosteroid treatment of the nephrosis, and the second was switched to diethyldithiocarbamate with good results but later died of liver failure. One other death in the series

occurred in a patient with an acute form of Wilson's disease. Of the surviving patients, definite improvement occurred in 4, and 2 resumed normal activities including 1 who was able to have a normal pregnancy. Osteoarticular lesions did not improve, but Kayser-Fleischer corneal rings decreased or disappeared in 4 instances. (7 refs.)
D. Martin.

Department of Medicine
University of Paris
Paris, France

1195 KATSUKI, SHIBANOSUKE, & OKUMURA, MAKOTO. Treatment of Wilson's disease. *Birth Defects Original Article Series*, 4(2):136-138, 1968.

The therapeutic effect on Wilson's disease of estrogens, corticosteroids, EDTA, BAL, and penicillamine was evaluated in 3 patients who were treated for 3 to 5 years, and penicillamine was found most effective. Patients were ages 14, 15, and 22 at the start of treatment and all were symptomatic. Oral corticosteroids and EDTA did not produce cupriuresis nor clinical improvement. Ethynyl estradiol produced cupriuresis but no remission of symptoms, and BAL injections produced moderate cupriuresis and neurologic improvement. Marked cupriuresis and negative copper balance were achieved in all patients only with penicillamine, and 2 of the 3 had good neurologic remissions. (7 refs.)
D. Martin.

Second Department of Internal Medicine
Kyushu University
Fukuoka, Japan

1196 OCKERMAN, P. A. A technique for the enzymatic diagnosis of glycogen storage disease on very small tissue specimens. *Acta Paediatrica Scandinavica*, 57(2):105-109, 1968.

Methods for glucose-6-phosphatase, phosphorylase amylo-1,6-glucosidase and α-glucosidase assays on 0.5-2 mg biopsy tissue samples were compared to methods requiring larger samples. The methods are modifications of some previously described and are given in detail. Good correlation was obtained between the new and old methods on biopsies from 5 normal adults (CAs 21-71) and 2 children (CAs 1 and 5). In 7 biopsy and 1 autopsy specimens, it was also possible to diagnose Types I, II, III, and IV glycogen storage diseases using the new methods. (12 refs.) - *D. Plaut.*

Department of Clinical Chemistry
University Hospital
Lund, Sweden

1197 DiGEORGE, ANGELO M. Congenital absence of the thymus and its immunologic consequences: Concurrence with congenital hypoparathyroidism. *Birth Defects Original Article Series*. 4(1):116-123, 1968.

Concurrent absence of the thymus noted in 4 infants under treatment for congenital hypoparathyroidism was associated with immunologic incompetence and recurrent infection despite normal numbers of peripheral lymphocytes and normal levels of immunoglobulins. Athymia must be suspected in patients with hypoparathyroidism and hypocalcemic tetany since these structures as well as the cardiovascular system, thyroid, and esophagus develop from common primordia. The athymic infant is the ideal S in whom to study the function of the thymus in man. Extensive laboratory investigation in 1 infant with recurrent massive infections and growth failure revealed normal counts of lymphocytes and plasma cells and normal immunoglobulins but an inability to respond to known antigens, to passively acquire tuberculin reactivity, reject a skin homograft, or build antibodies in response to vaccines. The thymus is essential to the development of cellular immunity but the sparing of a whole system of lymphocytes, germinal centers, plasma cells, and immunoglobulins indicates that thymus-independent, immunoglobulin-producing system must also exist. (14 refs.) - *E. L. Rowan.*

Temple University School of Medicine
Philadelphia, Pennsylvania 19133

1198 GONATAS, NICHOLAS K., BAIRD, HENRY W., & EVANGELISTA, IRENE. The fine structure of neocortical synapses in infantile amaurotic idiocy. *Journal of Neuropathology and Experimental Neurology*, 27(Part I, 1): 39-49, 1968.

The synaptic changes in a case of infantile amaurotic idiocy (Tay-Sachs disease) were studied by light and electron microscopy and were found to differ from those in experimental degeneration and "human synaptic disease." A biopsy of the brain neocortical

area of a 4-year-old patient with Tay-Sachs disease revealed many normal synapses, and some synapses with abnormalities of either the axon terminals or dendrites, but never both. Cytosomes found in the postsynaptic terminals were similar to those found in the glial and neuronal perikarya. Unidentifiable structures were observed in the presynaptic axon terminal and some possible "transformed multivesicular bodies" were found in the dendrites. The abnormalities of the synapses probably represent the basic cellular disorder in Tay-Sachs disease. (26 refs.) - *M. T. Lender.*

University of Pennsylvania
School of Medicine
Philadelphia, Pennsylvania 19104

1199 DANES, B. SHANNON, & BEARN, ALEXANDER G. Metachromasia and skin-fibroblast cultures in juvenile familial amaurotic idiocy. *Lancet*, 2(7573):855-856, 1968.

Familial amaurotic idiocy can now be added to the growing list of inborn errors of metabolism which can be detected in the homozygous and heterozygous state by means of metachromatic staining in fibroblast cultures. This method may be applicable to a still larger number of inherited storage diseases. (17 refs.) - *Journal summary.*

Cornell University Medical College
New York, New York 10021

1200 GONATAS, NICHOLAS K., GAMBETTI, PIERLUIGI, & BAIRD, HENRY. A second type of late infantile amaurotic idiocy with multilamellar cytosomes. *Journal of Neuropathology and Experimental Neurology*, 27(3):371-389, 1968.

Two cases of amaurotic idiocy seem to be a second type of late infantile amaurotic idiocy and can be distinguished from juvenile amaurotic idiocy, systemic lipidosis, and the Jansky-Bielschowsky form of late infantile amaurotic idiocy. In both cases, the onset of the disease was 3 years of age. Both showed optic atrophy and pigmentation in and around the macular area. Electron microscopy and cytochemical stains of the cerebral biopsies revealed that most of the neurons showed displacement of the nuclei, "peripheral distribution of Nissl substance," and some enlargement of the cytoplasm. The cytoplasm contained a granular substance that showed differential staining and had yellow autofluorescence at 39-41 mμ. The neuronal cytoplasm had multilamellar cytosomes, which occupied predominantly 1 pole of the cytoplasm, were irregular in shape, and measured about 2 μ in their greatest dimension. The multilamellar cytosomes have not been found in any other lipidoses to date. (39 refs.) - *M. T. Lender.*

School of Medicine
University of Pennsylvania
Philadelphia, Pennsylvania 19104

1201 NAKANE, YOSHIBUMI. Abnormal leukocytes in patients and family carriers of cerebral lipidoses. *Psychiatria et Neurologia Japonica*, 70(10):900-921, 968, 1968.

Eleven patients with cerebral lipidoses (gargoylism, Niemann-Pick, late infantile cerebral lipidosis, and juvenile cerebral lipidosis) and 22 family members were investigated for leukocyte abnormalities. Vacuolated lymphocytes were found in patients and family members with gargoylism and juvenile lipidosis, but not in patients or family members with Niemann-Pick's disease or late infantile cerebral lipidosis. The etiology of vacuole and granule formation in lymphocytes in these disorders is from the same mechanism of lipid accumulation. Vacuoles and granules are found in other diseases; however, the patterns of appearance in the cerebral lipidoses are unique. (39 refs.) - *M. Drosman.*

Department of Neuropsychiatry
Nagasaki University School of Medicine
Nagasaki, Japan

1202 KLEIN, D. Genetic aspects of the neurolipidoses. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 369-383.

Extensive investigation of the morphological and biochemical criteria of diseases in which sphingolipids accumulate in the central nervous system has resulted in a revised classification of these entities into 4 groups: familial amaurotic idiocy; Niemann-Pick disease; Gaucher's disease; and the metachromatic leucodystrophies. Familial amaurotic idiocy, an autosomal recessive accumulation of gangliosides is divided into the congenital form, infantile form (Tay-Sachs disease), late

juvenile form, adult form, and generalized gangliosidosis. Niemann-Pick disease, an autosomal recessive storage of cerebral sphingomyelin, presents in classical cerebral infantile, cerebral juvenile, and adult forms. Gaucher's disease in which cerebrosides are stored in the central nervous system includes both recessive and dominant types of chronic adult forms; an acute, infantile, cerebral form (recessive); and a juvenile or adult cerebral form (recessive). Cerebroside sulfate accumulates in the heredo-familial leucodystrophies: degenerative diffuse sclerosis of the neutral-fat type, Pelizaeus-Merzbacher disease, familial infantile diffuse sclerosis of Krabbe, familial diffuse sclerosis of Scholz-Bielschowsky-Henneberg, spongy degeneration of the cerebral white matter, dysmyelinogenic leucodystrophy, and "special and combined types" of demyelinating diseases. (101 refs.) - *E. L. Rowan.*

1203 ADAMS, D. D., & KENNEDY, T. H. Measurements of the thyroid-stimulating hormone content of serum from hypothyroid and euthyroid people. *Journal of Clinical Endocrinology and Metabolism,* 28(3):325-331, 1968.

Serum thyroid-stimulating hormone (TSH) levels in hypothyroid and euthyroid people were measured, using McKenzie's bioassay for TSH together with a neutralization test with TSH antiserum to allow correction for nonspecific responses. The mean value in 7 hypothyroid adults was 11.5 μg of the human TSH research standard, MRC A/100 ml serum. The mean value in 3 cretinous babies was 34 μg. To measure the TSH level in the euthyroid people, it was necessary to concentrate 1,500 ml of pooled serum to a volume of 3 ml, using a 2-stage protein fractionation procedure. The value found was 0.023 μg MRC A/100 ml serum. Treatment of the euthyroid people with thyroxine in suppressive dosage reduced the serum TSH to an undetectable level. (22 refs.) *Journal summary.*

New Zealand Medical Research Council
Medical School
Dunedin, New Zealand

1204 SEAKINS, J. W. T., & ERSSER, R. S. Effects of amino acid loads on a healthy infant with the biochemical features of Hartnup disease. *Archives of Disease in Childhood,* 42(226):682-688, 1967.

A healthy male infant admitted for examination because of excessive thirst and polyuria was found to have the biochemical, but not the clinical features of Hartnup's disease; he had a consistent aminoaciduria, but no mental or physical retardation, rash, or cerebellar ataxia. The infant had normal fecal amino acids before oral loading tests were performed; however, tyrosine and lysine absorption were definitely abnormal after such tests. Tyrosine also inhibited the absorption of other neutral amino acids, while oral phenylalanine load caused an excess of urinary tyrosine. Since both diffusion and active transport are involved in intestinal amino acid absorption, a saturation of the carrier system as in Hartnup's disease would cause abnormal amounts of amino acids in the feces. The differences between the proband and other patients with this disorder needs further investigation. (17 refs.) *E. Gaer.*

Institute of Child Health
London W. C. 1, England

1205 MATSANIOTIS, N., KATTAMIS, C., LEHMANN, H., & ORRELL, D. H. Urinary excretion of acid muco-polysaccharide in sibs with Morquio's syndrome and Reilly's granules in leucocytes. *Archives of Disease in Childhood,* 42(226):652-653, 1967.

The level of acid mucopolysaccharides in the urine of 2 siblings with Morquio's syndrome and Reilly's granules in leucocytes was found to be normal. Both children, 1 male and 1 female, had thoracic kyphosis, increased anteroposterior chest diameter, genu valgum, palpable liver, and Reilly's granules in some neutrophils. Other physical findings included excessively mobile joints, heart murmur, radiographical flattening of the vertebral bodies, and irregular ossification of femoral heads. The 24-hour urinary excretion of acid mucopolysaccharides was estimated as the amount of glucuronic acid released by hydrolysis with concentrated sulphuric acid and while the urinary level of acid mucopolysaccharides has been found to be elevated in Hurler's disease, the current study is in agreement with some past studies of Morquio's syndrome where the level was found to be normal. (13 refs.) - *E. Gaer.*

Aghia Sophia Hospital
Athens 609, Greece

1206 DeJONG, BERNARD P., ROBERTSON, W. VAN B., & *SCHAFER, IRWIN A. Failure to induce scurvy by ascorbic acid depletion in a patient with Hurler's syndrome. *Pediatrics*, 42(6):889-903, 1024, 1968.

Although a 10-week-old infant with Hurler's syndrome was placed on an ascorbic-acid-deficient diet for 1 year, she did not demonstrate chemical or clinical evidence of scurvy. When treatment began, the serum ascorbic acid levels were 1.0-2.0mg/100 ml in the blood and 30.0-35.0 mg/ml in the buffy coat. The acid became undetectable in the blood at 16 weeks and in the buffy coat at 32 weeks. Throughout the treatment period, glycosaminoglycan excretion averaged 250 mg uronic acid/gram of creatine; dermatan sulfate continued to account for 29-36% of total glycosaminoglycan excretion. Hydroxyproline, ACTH stimulation, and urinary α-amino nitrogen were not influenced significantly by the acid-deficient diet. An oral dose of L-phenylalanine at 52 weeks of age did not increase phenylalanine and tyrosine levels in the serum or tyrosyl derivatives in the urine. Normal wound healing and histology were observed. Physically, the S displayed progressive changes of Hurler's disease, but did not show gross mental deterioration (mental quotient of 86 and motor quotient of 77 on the Bayley scales). This case raises the question of whether patients with Hurler's disease have a unique requirement for vitamin C. (58 refs.) - *A. Huffer.*

*Department of Pediatrics
Metropolitan General Hospital
Cleveland, Ohio 44109

1207 OCKERMAN, P. A. Deficiency of β-galactosidase and α-mannosidase--Primary enzyme defects in gargoylism and a new generalized disease? *Proceedings of the Fifteenth Northern Pediatric Congress (Bergen, Norway, June 28 to July 1, 1967)* in *Acta Paediatrica Scandinavica*, Supplement 177, 35-36, 1967.

β-Galactosidase was found to be deficient in the liver, skin, and brain of patients with Hurler's syndrome and deficient in the skin of patients with Hunter's syndrome; this enzyme deficiency leads to an accumulation of mucopolysaccharides and gangliosides in the lysosomes of these patients and subsequent clinical symptoms. Increased acid hydrolases were found in the blood plasma of Ss with these 2 disorders. A new disorder involving marked accumulation of a PAS-positive substance in the nervous system was discovered in a patient with MR, hepatosplenomegaly, abnormal vertebrae, hypogammaglobulinemia, vacuolized lymphocytes, and storage cells in the bone marrow. The liver, spleen, and brain were found to be deficient in α-mannosidase while several other acid hydrolases were found to be more active than in normal controls. This is believed to be the first description of this particular enzyme deficiency disease. (No refs.) - *M. Drosman*

Department of Physiological Chemistry
University of Lund
Lund, Sweden

1208 LOWREY, GEORGE H., BACON, GEORGE E., FISHER, STANLEY, & KNOLLER, HILDA. Fasting growth hormone levels in mentally retarded children of short stature. *American Journal of Mental Deficiency*, 73(3):474-476, 1968.

Fasting serum growth hormone assays were obtained on 46 MR children with short stature. The median level was not different from that of 2 control groups. The etiology of the stunted growth associated with mental deficiency remains speculative, but it apparently is not related to decreased growth hormone levels in the fasting state. (9 refs.) *Journal summary.*

Department of Pediatrics
University Medical Center
Ann Arbor, Michigan 48104

1209 WOLSTENHOLME, G. E. W., & O'CONNOR, MAEVE, eds. *Nutrition and Infection.* Boston, Massachusetts, Little, Brown, and Company, 1967, 144 p. (Price unknown)

This report of CIBA Foundation study group number 31 on nutrition and infection examines long-term or permanent effects of early exposure to infection, and the "vicious circle" relationship between malnutrition and bacterial infection. The form and intensity of endosymbiosis appear to be related to long-term constitutional effects. It may be that the relatively high levels of γ-globulin found in adults throughout the African continent reflect greater exposure to micro-organism antigens. Malaria appears to affect the human constitution *in utero* in spite of

the apparent placental barrier to the parasite. Breast-fed infants demonstrate a positive effect in resistance to disease in both gastrointestinal and parenteral infection. Young children with a low weight for age are highly susceptible to gastrointestinal infection. Malnutrition and infection regularly coexist in Ethiopian children, although the true nature of this coexistence has not yet been identified. High mortality rates in children under age 5 in developing countries like Nigeria appear to be due to an interaction between infection and malnutrition. The papers presented in this book should be of interest to persons in the biological sciences. (107 refs.) - *J. K. Wyatt.*

CONTENTS: Introduction of specific microorganisms into germ-free animals (Gustafsson); Placental malaria and foetal growth failure (Jelliffe); Interaction of nutrition and infection (Maegraith); Human milk and resistance to infection (Gyorgy); Studies on protein-calorie malnutrition and infection (Wittman, Moodie, Hansen, & Brock); Malnutrition and infection in Ethiopia (Vahlquist); Interactions of nutrition and infection: Experience in Nigeria (Hendrichse); Effect of infection and diet on child growth: Experience in a Guatemalian village (Mata, Urrutia, & Garcia).

1210 Nutrition and the developing brain. *British Medical Journal,* 1(5588):333-334, 1968. (Editorial)

Studies on infants with brain damage resulting from improper nutrition, both before (chronic) and immediately after (acute) birth are discussed. In 1 study, hypoglycemia occurred in 3 Ss within 18 hours of birth, continued up to 40 hours, and death occurred between 45 and 56 hours. Histological examination showed that primary changes in all 3 Ss were in the nuclei of neurones. Symptoms in another 3 Ss, including 2 who were treated before clinical symptoms appeared, lasted 9 to 37 hours, death was prolonged (64 hrs; 7 1/2 days; 6 mos), and histological abnormalities were either slight or nonexistent. A second study of 122 Ss (CA 1 day to 2 1/4 yrs) with probable infantile hypernatremia showed that of 100 Ss followed for 18 months, 16 had neurological sequelae. Neither hypernatremia nor hypoglycemia are prevalent causes of neonatal brain damage; however, they are only 2 of possible nutritional disturbances. Detection of persistent difficult behavior in infants, proper diagnosis of the malnutrition, and subsequent treatment are required of pediatricians. (5 refs.) *J. P. West.*

New Growths

1211 RUNDLE, A. T. Serum glycoproteins and tuberous sclerosis. *Journal of Mental Deficiency Research,* 12(1):54-62, 1968.

Serum glycoprotein concentrations in 18 MR Ss with tuberous sclerosis and 19 healthy MR controls were estimated to: determine whether glycoproteins are responsible for the elevation of the (α+β)-globulin fraction seen in tuberous sclerosis; investigate whether glycoproteins are directly related to the disease; and investigate the idea that abnormal collagen synthesis is due to an error in connective tissue metabolism. The means of the total glycoproteins (measured as tyrosine and carbohydrate), hexosamines, non-glucosamine polysaccharides, and sialic acid were not significantly different for the groups for any of these fractions. Serum electrophoresis patterns, when stained for glycoprotein, showed no differences in either distribution or relative intensities between the sclerosis group and controls. Apparently, no error in collagen matabolism exists and the elevation in the globulin fractions is not due to glycoproteins. (15 refs.) - *D. Plaut.*

St. Lawrence's Hospital
Caterham, Surrey, England

1212 AKESSON, H. O., & RAYNER, S. Epiloia and cutis verticis gyrata. *Journal of Mental Deficiency Research*, 12(1):9-12, 1968.

A third case of the occurrence of epiloia (tuberous sclerosis) in association with cutis verticis gyrata (folds and furrows in the scalp) and mental deficiency is reported. A male patient with epilepsy, MR, and adenoma sebaceum was diagnosed as having tuberous sclerosis. At age 25 years, mild cutis verticis gyrata was discovered on the vertex and temporal regions of the head; however, histology of the tissue from these areas showed no abnormality. Although the relationship between tuberous sclerosis and cutis verticis gyrata is not known, careful examination for 1 of these conditions is recommended whenever the other is diagnosed. (11 refs.) *W. Asher.*

Psychiatric Research Centre
St. Jorgen's Hospital
University of Gothenburg
Gothenburg, Sweden

1213 JENKIN, R. D. T. Medulloblastoma in childhood: Radiation therapy. *Canadian Medical Association Journal*, 100(2):51-54, 1969.

During the period 1940 to 1965, 47 children were seen following operation for posterior fossa medulloblastoma or cerebellar sarcoma. Their response to irradiation is reviewed. Before 1952, 16 received postoperative irradiation to less than the whole central nervous system. None survived 4 years after the operation. Since 1952, 30 children have completed postoperative irradiation to the whole of the CNS (approximately 3,200 rads over 4 to 5 wks). Eight of 15 patients survive at 5 years and 3 of 6 patients at 10 years. The site of first recurrence after whole CNS irradiation was the posterior fossa in 15 of 18 patients. Provisional evidence is presented that an additional 1,000 to 1,500 rads in 7 to 10 days to the posterior fossa may reduce this recurrence rate. (1 ref.) - *Journal summary.*

The Princess Margaret Hospital
Toronto 5, Ontario, Canada

Unknown Prenatal Influence

1214 ANDERSSON, H., & GOMES, S. PARANHOS. Craniosynostosis: Review of the literature and indications for surgery. *Acta Paediatrica Scandinavica*, 57(1):47-54, 1968.

Of 38 patients with craniosynostosis (including 4 Ss with Crouzon's syndrome, 2 Ss with Apert's syndrome, and 1 S with Carpenter's syndrome), 36 had linear craniectomies. There were few postoperative complications, no deaths, and only 6 patients were MR, which is significantly fewer than a previously reported rate of 40%. A case report of a 9-year-old boy indicates that psychic retardation can be prevented or reversed with early diagnosis and surgery. Evidence from a review of the literature indicates that prophylactic surgery should be performed in all cases in order to prevent cosmetic malformations, MR, and other malfunctions which probably result from increased intracranial pressure and abnormal growth of the brain. (59 refs.) - *M. T. Lender.*

University of Gothenburg
Gothenburg, Sweden

1215 GAUDIER, B., LAINE, E., FONTAINE, G., CASTIER, C., & FARRIAUX, J.-P. Les craniosynostoses: Etude de vingt observations (Craniosynostosis: Study of twenty cases). *Archives Francaises de Pediatrie*, 24(7):775-792, 1967.

Observations on 20 Ss with sagittal, coronal, and multiple (both) craniosynostosis indicate that surgical intervention may be helpful; however, the possibility of failure does exist. Three children (CA 6 mos-6 yrs) showed sagittal suture synostosis and 12 showed both sagittal and coronal suture synostosis. Only 8 of the 20 cases were discovered because of abnormal crania; the remainder were found because of complaints of exopthalmia, growth retardation, and abnormal horizontal cephalic indices. Six of the patients were premature at birth. Of the 13 Ss who had craniectomy surgery, the results were good in 7 Ss, mediocre in 1 S, and poor in 2 Ss. Three cases of craniectomy could not be judged validly. Surgery should be risked in order to attempt to avoid the serious manifestations of craniosynostosis. (22 refs.) - *M. T. Lender.*

Clinique de Pediatrie et de
Puericulture
Hopital Calmette
Lille, France

1216 KIM, MOON H., & HERRMANN, WALTER L. In vitro metabolism of dehydroepiandrosterone sulfate in foreskin, abdominal skin, and vaginal mucosa. *Journal of Clinical Endocrinology and Metabolism*, 28(2):187-191, 1968.

Newborn foreskin, abdominal skin from a normal and an anencephalic infant, and vaginal mucosa were incubated with dehydroepiandrosterone-7α-^{3}H-sulfate (DHA-7α-^{3}H-SO_4) (ammonium salt). The substrate was converted to dehydroepiandrosterone (DHA) in all incubations, with the yield ranging from 5.7 to 14.2%, indicating the presence of steroid sulfatase in the tissues studied. Under the conditions of these incubations, 3β-hydroxysteroid dehydrogenase and 17β-reductase activity converted the metabolites into Δ^4-androstene-3, 17-dione (Δ^4-A) and testosterone. (21 refs.) - *Journal summary.*

Department of Obstetrics and Gynecology
Severance Hospital
University School of Medicine
Seoul, Korea

1217 SCHENK, V. W. D., DE VLIEGER, M., HAMERSMA, K., & DE WEERDT, J. Two rhombencephalic anencephalics: A clinicopathological and electroencephalographic study. *Brain*, 91(3):497-506, 1968.

Two rhombencephalic anencephalic babies were examined and found to have more fast activity in EEG tracings than normal and no slow activity. Only the roots and nuclei of the cranial nerves, the central nuclei of the medulla oblongata, the gigantocellular reticular nuclei, and parts of the distal pontine reticular nuclei, could be found upon necropsy. An associated study in which 78 anencephalic patients were examined revealed that in 15 cases there were defects in the rostral part of the spinal cord and caudal part of the brain. Eighteen cases showed faulty closure in the rostral area of the brain, and 45 had defects in both the entire brain and spinal cord. The incidence of all anencephaly was more than twice as frequent in females as in males; however, in the case of rhombencephalic anencephalics, the male sex dominated. The short life of most anencephalics does not allow much insight into the development of the EEG in the newborn. (17 refs.) *M. T. Lender.*

Dijkzigt Hospital
Rotterdam, The Netherlands

1218 ALTHER, E. The absorption deficit of cerebrospinal fluid in hydrocephalus: A method of measuring the degree of disturbance of cerebrospinal fluid circulation in hydrocephalus. *German Medical Monthly*, 13(7): 324-330, 1968.

The degree of disturbance of CSF circulation in hydrocephalus has been measured by continuous drainage of excess CSF from the ventricles. This amount, the absorption deficit, is expressed in ml/period of measurement. The concept of absorption deficit is explained and its changes in various types of hydrocephalus illustrated. The nature and circulation of CSF are discussed. The relationship between the CSF and the systemic circulation is shown to have a bearing on the pathology of hydrocephalus. Rules about the treatment of hydrocephalus have been derived from the results obtained by measuring the absorption deficit. (48 refs.) - *Journal summary.*

Isisbuhlstr. 15
CH 8800 Thalwil bei
Zurich, Switzerland

1219 GUIOT, G. Technique simplifiee de ventriculo-cisternostomie pour hydrocephalie obstructive (Simplified technique of ventriculo-cisternostomy for obstructive hydrocephaly). *Revue Neurologique*, 119(1): 391-392, 1968.

Five successful operations have been performed to relieve obstructive hydrocephaly by using a simplified technique of ventriculo-cisternostomy. Radioscopic control is used, while a leucotome trocar is descended through a hole "placed on the coronale suture 15 mm from the median line, in the lateral ventricle." The Lipiodol is injected to the floor of the third ventricle, which is perforated just behind the dorsum sellae. The Lipiodol follows the length of the clivus toward the occipital foramen and falls into the rachis. This simplified method has been found to be effective when the sub-arachnoid space is permeable. The role of this operation in treating obstructive hydrocephaly has not yet been determined. (5 refs.) *M. Lender.*

No address

1220 BERG, J. M., SMITH, G. F., RIDLER, M. A. C., McCREARY, B. D., FAUNCH, JANET A., FARNHAM, FAITH N., & ALLEN, MARY L. De Lange syndrome: Report of a case with an unusual karyotype. *Journal of Medical Genetics*, 4(3):184-189, 1967.

A 6-year-old male was found to have the mental, physical, and dermatoglyphic characteristics of de Lange syndrome and both he and his father had an atypical metacentric 6-12 group chromosome; however, it was not considered as a cause of the syndrome, but rather as an associated finding. Abnormalities included an IQ of 25, small stature, small head, low hairline, confluent eyebrows, long eyelashes, broad root of the nose, flared and anteverted nostrils, thin lips, small and low set ears, prominent symphysis menti, moderate micrognathia, undescended testes, hirsute back, limitation of the elbows, malformed right hand, and tendency to syndactyly of the left hand and toes. Dermatoglyphic abnormalities which corresponded to previous reports were: on the left hand, a radial loop on the second digit, disturbances of triradii *a* and *b* at the base of the fingers, and wide *atd* angle. Karyotype studies revealed that the abnormal chromosome was probably a number 9. X-rays of the wrists revealed a bone age of 2 years, 8 months. (17 refs.) - *E. Gaer.*

Harperbury Hospital
St. Albans, England

1221 GWINN, JOHN T. Radiological case of the month: Apert's syndrome. *American Journal of Diseases of Children*, 115(4):469-470, 1968.

Radiological and photographic illustrations were made in the case presentation of a girl examined at 12 hours of age for multiple congenital defects of heart and skeleton. Examination revealed exophthalmos, oxycephaly, widening of the sagittal suture, suspected premature synostosis of the coronal and lambdoidal sutures and cleft palate. Syndactylism of all 4 extremities was also present. The patient died on the fifteenth hospital day of congestive heart failure due to multiple congenital heart lesions. (4 refs.) *J. Snodgrass.*

4614 Sunset Boulevard
Los Angeles, California 90027

1222 MASINI, T., ISHINO, H., & MARTIN, J. J. Sur un etat marbre a predilection thalamique et localisation pseudosystematisee (Sa differenciation a l'egard des degenerescences primaires) (Status marmoratus with thalamic predilection and pseudosystemic localization [Its differentiation from primary degenerations]). *Acta Neuropathologica*, 9(4):357-362, 1967.

A 3-year-old male with MR and infantile cerebral palsy was determined at autopsy to have had status marmoratus of the thalamus and putamino-pallidal necrotic foci. The putamino-pallidal lesions were related to the thalamus irregularities and demonstrated the primary importance of the thalamus pathogenesis. Three similar cases are known where atrophy of the thalamus, traumatic birth, "pyramidal" signs, and convulsions led to early death (6-16 months). Continued research should be conducted in order to understand the relationship between thalamus irregularities and infant MR. (13 refs.) - *M. Lender.*

18 Jan Moorkensstraat
Antwerp, Belgium

1223 BOSCHERINI, B., DI PIERO, G., NATOLI, G., PRESTI, A., RUTILONI, C., & ZAPPELLA, M. Cerebral gigantism in childhood: Report of two cases. *Helvetica Paediatrica Acta*, 23(4):384-394, 1968.

Two children with cerebral gigantism are reported; they showed the characteristic features of this syndrome: association of megalencephaly, MR, gigantism, acromegalic features, rapid osseous growth in the first years of

life and some typical physiognomic abnormalities. In both patients abnormalities of carbohydrate metabolism were noted and in 1 of them an increased serum level of somatotropin (HGH). (21 refs.) - *Journal summary.*

Via Asmara 14
Rome, Italy

1224 HOOFT, C., SCHOTTE, H., & VAN HOOREN, G. Gigantisme cerebral familial (Familial cerebral gigantism). *Acta Paediatrica Belgica,* 22(3):173-186, 1968.

Cerebral gigantism including craniofacial dysmorphia (macrocephaly), large hands and feet, joined third and fourth metacarpals, and psychomotor retardation with an IQ of 45-70 are reported for the first time in 2 children from the same family. The Ss (CAs 2 and 3 yrs) are first cousins and the family history includes a high rate of miscarriage and infant mortality. The children rank in the 97th percentile or above in height, bone maturation is 2 or 3 years ahead of the norm, and dermatoglyphic abnormalities are present in 1; however, no biochemical disorders could be demonstrated. Eighteen additional cases of familial cerebral gigantism were described after preparation of this paper and these references are given. (11 refs.)
M. Drossman.

Rijksuniversiteit - Ghent
Ghent, Belgium

1225 RORKE, LUCY BALIAN, FOGELSON, M. HAROLD, & RIGGS, HELENA E. Cerebellar heterotopia in infancy. *Developmental Medicine and Child Neurology,* 10(5):644-650, 1968.

The cerebella of 200 infants were examined for dysplastic microscopic cell rests. Six of the infants had trisomy defects; 47 non-trisomic babies showed only isolated somatic, non-neural malformations and 147 cases displayed neither somatic nor cerebral malformations. Four types of cerebellar rests were identified. Most common were compact groups of mature neurons primarily localized in the white matter. These were found in about 1/2 the infants in each group. Less frequent were immature granular cell collections and poorly organized mixed cell rests or heterotaxias. These occurred significantly more often in babies with trisomy than in the other 2 groups. Very few heterotopias or well-organized mixed cell rests were found, and there was no difference in the incidence between the 3 groups. Out of 6 infants with chromosomal trisomy, 5 (83%) showed 1 or more of these dysplastic cerebellar cell rests. Since 82% of the non-trisomic cases had similar microscopic malformations, it appears unlikely that the chromosomal defect could be responsible for this curious anatomic abnormality. (9 refs.) - *Journal summary.*

Philadelphia General Hospital
Philadelphia, Pennsylvania 19104

Unknown or Psychogenic Cause with Reaction Manifest

1226 ZELLWEGER, HANS, & SCHNEIDER, HANS J. Syndrome of hypotonia-hypomentia-hypogonadism-obesity (HHHO) or Prader-Willi syndrome. *American Journal of Diseases of Children,* 115(5):588-598, 1968.

Fourteen children with the hypotonia-hypomentia-hypogonadism-obesity or Prader-Willi syndrome observed by these authors and 79 cases reported by other investigators are reviewed. The syndrome appears to be a well defined clinical entity. Its essential manifestation can be divided into 2 distinct phases. The first phase, characterized by severe congenital hypotonia or atonia with areflexia and severe feeding difficulties, lasts several months. The second phase is manifested by mental subnormality, hyperphagia, obesity, short stature, and hypogonadism. Review of the laboratory findings reveals no constant abnormalities. Differential diagnosis of each phase and the possible etiology of the hypotonia-hypomentia-hypogonadism-obesity syndrome are briefly discussed. (36 refs.) - *Journal summary.*

University of Iowa
Iowa City, Iowa 52240

1227 KAMOSHITA, SHIGEHIKO, AGUILAR, MARY JANE, & *LANDING, BENJAMIN H. Infantile subacute necrotizing encephalomyelopathy. *American Journal of Diseases of Children,* 116(2):120-129, 1968.

Four cases of infantile subacute necrotizing encephalomyelopathy (ISNE) were diagnosed at postmortem examination. Although clinical signs, symptoms, and courses of the 4 patients were greatly variable, all of them terminally developed bulbar symptoms, and died of respiratory difficulty. In 1 case, as noticed in the recent reports of this disease, persistent acidosis of undetermined origin was an outstanding feature. The histopathological findings were similar, being characterized by symmetrical necrosis of basal ganglia and brain stem, with vascular proliferation and spongy change. One case in the present series showed fornico-mammillary necrosis, a lesion not uncommon in Wernicke's encephalopathy. Furthermore, review of the literature brought to light 4 additional cases of ISNE with involvement of the mammillary bodies. Chemical studies on the brain and liver of 1 case, including lipid and trace metal analyses, were within normal limits, suggesting that derangement of metabolism of lipid or trace metals is not of primary pathogenetic significance in ISNE. (35 refs.) - *Journal summary.*

*Childrens Hospital of Los Angeles
Box 54700, Terminal Annex
Los Angeles, California 90054

1228 OTRADOVEC, J. Klinicky obraz chorioretinalnich zmen u subakutni sklerozujici leukoencefalitidy (The clinical picture of chorioretinal changes in subacute sclerotizing leukoencephalitis). *Sbornik Lekarsky,* 70(8-9):229-236, 1968.

The clinical aspects of the chorioretinal changes in subacute sclerotizing leukoencephalitis (SSLE) are discussed. Sixteen cases of SSLE were analyzed for ophthalmological changes in the macular region and such changes were found to occur in 1 or both eyes in 30% of the Ss tested. The macular region appeared turpid and oozing, the retina was ragged and hemorrhagic; however, as long as vision remained, it continued to be very good. These ocular symptoms may precede the neurological and psychiatric phase of this disorder by several weeks. Immunological and allergenic aspects of SSLE in the etiology of the ocular findings are also discussed. (11 refs.) - *M. Drossman.*

Na Smetance
Prague 2, Czechoslovakia

1229 KLOUCEK, F., & OTRADOVEC, J. Histopatologicky obraz centralnich retinochorioidalnich zmen u subakutni sklerozujici leukoencefalitidy (Histopathological picture of the central retinochorioidal changes in subacute sclerosing leukoencephalitis). *Sbornik Lekarsky,* 70(8-9):237-240, 1968.

Two Ss with subacute sclerosing leukoencephalitis showed histopathological changes in corresponding regions of the vascular membrane and retina in 3 of the eyes. In the central region of the retina, a thin glious scar (2 mm in diameter) was found which had light-sensitive elements missing and a disgrouping of pigment and hyaline foci. On the edge of this atrophic focus in the internal nuclear layer were esosinophilic florin-red-stained nuclei. The marginal part of the focus also contained some plasmatic cells. No pigment layer, Broch membrane, nor choriocapillaris were found in the vascular membrane. It was not possible to determine whether the changes were of an inflammatory or degenerative nature, since the histological picture represented a terminal scar stage. The presence of plasmatic cells could indicate immunobiologic activity. (4 refs.) *A. Clevenger.*

University Karlovy
U nemocnice 2
Prague, Czechoslovakia

1230 THEISS, BRIGITTE. Eineiige Zwillinge mit Ichthyosis vulgaris diskordant kombiniert mit multiplen Fehlbildungen (Identical twins with ichthyosis vulgaris and discordant multiple handicaps). *Helvetica Paediatrica Acta,* 23(5):429-444, 1968.

The paper reports about identical twins who at the age of 5 months fell ill with ichthyosis vulgaris (type ichthyosis nitida) of corresponding localization and character. One of the boys has otherwise been healthy and normally developed up to now. His twin-brother, however, is stricken with most severe psychomotor developmental retardation, lack of corpus callosum, epilepsy, bilateral cheilognathopalatoschisis, and bilateral cryptorchidism. A brother, who is 3 years older, is also suffering from ichthyosis vulgaris to a lesser degree. A sister, 4 years of age, is ill with glycogenosis. The concordance of ichthyosis vulgaris in these identical twins is in accordance with the other 8 couples that have been reported up to now. The discordance as to the malformations has often been observed in identical twins, and has been attributed to varying manifestation. Because observations of the

combination of ichthyosis vulgaris with malformations are so extremely rare, we consider this combination to be most probably a mere coincidence. (58 refs.) - *Journal summary.*

No address

1231 PETERSON, RAYMOND D. A., & GOOD, ROBERT A. Ataxia-telangiectasia. *Birth Defects Original Article Series,* 4(1):370-377, 1968.

The autosomal recessive syndrome of ataxia-telangiectasia not only includes a progressive cerebellar degeneration (Purkinje cells) and prominence of oculo-cutaneous blood vessels, but also gonadal dysgenesis, frequent malignancies, and a susceptibility to respiratory infections secondary to an immunologic deficiency state. Characteristically, there is a low serum immunoglobulin A, quantitatively decreased cellular immunity (delayed hypersensitivity and skin homograft rejection), lymphopenia, and an abnormal thymus gland. These findings are consistent with a single gene defect and support the "2-cell line" concept of the development of lymphoid tissue, suggesting that the most significant line of research is not in the differentiation of phenotypic immunologic deficits but in the genesis of lymphoid tissue. (30 refs.) - *E. L. Rowan.*

University of Chicago
Chicago, Illinois 60637

1232 HENNER, KAMIL. A propos de la description par Mme Louis-Bar de l'"Ataxia teleangiectasia." Priorite de la description, par Lad. Syllaba et K. Henner en 1926, du reseau vasculaire conjonctival (On Mrs. Louis-Bar's description of ataxia telangiectasia. Priority of the description by Lad. Syllaba and K. Henner, in 1926, of the vascular conjunctive network). *Revue Neurologique,* 118(1):60-63, 1968.

The author's claim to have described ataxia-telangiectasia in 1926 is in conflict with Mrs. Louis-Bar. Mrs. Louis-Bar's description of this disorder was published in 1941, thus giving Mr. Henner a 15-year priority. (17 refs.) - *M. Drossman.*

Clinique Neurologique
Universite Charles-IV
Prague
Czechoslovakia

1233 LOUGHNANE, THOMAS. Hypothermia in a young adult. *Lancet,* 2(7565):455, 1968. (Letter)

A female MR (IQ, 41--Termann-Merrill scale) with congenital hemiparesis in whom epileptic fits recurred at age 18 after a 12-year lapse, twice developed hypothermia at age 25. Confusion, drowsiness, inability to walk, cold limbs, slurred speech, and subnormal temperature (below 95° F) were the presenting symptoms. The importance of this case lies in the discovery of hypothermia in this previously unsuspected age-group and the possibility of similar undetected cases in psychiatric and MR institutions. (3 refs.) *J. P. West.*

Rampton Hospital
Retford
England

1234 ROSENBERG, ROGER N., SCHOTLAND, DONALD L., LOVELACE, ROBERT E., & *ROWLAND, LEWIS P. Progressive ophthalmoplegia. *Archives of Neurology,* 19(4):362-376, 1968.

Twenty-eight patients (CA 5-66 yrs) with ocular myopathy, progressive ptosis, and ophthalmoplegia sparing the pupil were diagnosed as having progressive nuclear ophthalmoplegia. Neurologic examinations, muscle biopsies, electromyographies (EMG) of skeletal and extraocular muscles, and tests with neostigmine, edrophonium and tubocurarine (all unresponsive) were completed on all Ss. Except in cases with clinical evidence of neuropathy or motor neuron disease, the EMG studies were compatible with myopathy. Two Ss of 9 with signs of neural disease and 2 other cases in the literature were also MR. The criteria of ocular muscle weakness with pupil sparing, cannot differentiate cases of progressive ophthalmoplegia only from cases with coexistent neural disease. There are also limitations in ocular muscle biopsy, EMG of ocular muscles, and postmortem examinations of ocular muscles and brain tissue. (78 refs.) - *R. D. Nunn.*

Spiller Neurological Unit
University of Pennsylvania Hospital
Philadelphia
Pennsylvania 19104

1235 PRATT, JORDAN C., & RICHARDS, RICHARD D. Bilateral secondary congenital aphakia. *Archives of Ophthalmology*, 80(4): 420-422, 1968.

Bilateral secondary congenital aphakia with resorption of the lenses occurred in a 19-year-old SMR (IQ about 25) white woman; however, both globes appeared normally developed, with no signs of previous inflammation, surgery or trauma. Positive findings on admission for cleft-palate repair included chronic otitis media, incomplete cleft in soft palate, small tongue, horizontal jerk nystagmus, and iridodonesis. A corneal abrasion, which healed uneventfully, was noted in the post-operative period. There were no abnormal ocular findings in the patient's mother and several of her siblings. The etiology of secondary congenital aphakia could include lens resorption or extrusion of the lens through a corneal perforation. Lens resorption is thought to be more common and several theories to explain the mechanism can be found in the literature. The likelihood of defective developing lens fibers or defective lens capsule cannot be ruled out in this case. (10 refs.) - *R. D. Nunn.*

Department of Ophthalmology
University of Maryland
School of Medicine
Baltimore, Maryland 21201

1236 OSETOWSKA, E., & LEWENSTAM, K. Angiomatose sous-corticale bilaterale et osteogenese imparfaite (Bilateral subcortical angiomatosis and imperfect osteogenesis). *Journal of the Neurological Sciences*, 5(1): 79-92, 1967.

A 2-year-old child with osteogenesis imperfecta also suffered from vascular malformations in the brain. The S had been hospitalized 5 times with multiple fractures of long bones, hydrocephalus, bronchopneumonia, blindness, and convulsions. At autopsy the brain had bilateral, sub-cortical cavities along the hemispheres, malacia, and angiomatosis lining the interior cortical surface. In the temporo-occipital area, there were abnormally narrow and supplementary cerebral convolutions. Both the osteogenesis imperfecta and the vascular malformations are believed to have occurred from a "chain of formative interactions" in an inborn error of mesoderm developmental metabolism. (19 refs.) *M. Drosman.*

Hopital Provincial
Slupsk, Poland

1237 DEKABAN, ANATOLE S., & KLEIN, D. Familial mental retardation. *Acta Genetica et Statistica Medica*, 18(3):206-228, 1968.

The study of 3 to 4 generations of 3 large families revealed that genetic factors, rather than unfavorable external environment caused the high incidence of MR within each family. Psychological, neurological, and medical examinations were performed, as well as biochemical and other routine tests. Pedigree analysis revealed a possible dominant gene transmission in 2 families, with slight environmental effects. The third family showed multiple factor inheritance. (21 refs.) - *M. T. Lender.*

National Institutes of Health
Bethesda, Maryland

1238 NEW JERSEY. INSTITUTIONS AND AGENCIES DEPARTMENT. *Poverty and Mental Retardation: A Causal Relationship.* Hurley, Rodger L. (Division of Mental Retardation Planning and Implementation Project), Trenton, New Jersey, 1968, 212 p. (Price unknown)

The causal relationship between poverty and MR is so insidious and so strong that it constitutes a major source of damage to the human potential of the United States. Intelligence tests and adaptive behavior evaluations, the traditional methods for determining intellectual ability, are slanted toward the knowledge and experience possessed by the middle class. When used with poor children, these tests fail to measure their mental capacities or identify their real intellectual abilities. Although the results of the New York Demonstration project of 1957 and the Banneker school system of St. Louis prove that disadvantaged children can be educated, school statistics demonstrate that most public schools continually fail in their efforts to educate the poor. The major factor in this educational failure lies in the inability of impoverished parents to exercise an influence on school policies. Other influential factors which penalize the disadvantaged child and cause the schools to continue to fail in their efforts to educate them include the rigidity of public education; the middle class bias of school reward-punishment systems; unfair matching in competition for grades; de facto segregation; the inferiority implied by grouping or tracking programs; the irrelevancy and prejudice of textbook and curricula content; poor and inadequate teacher training; the high teacher turnover rate; poor quality instruction; and the students' lack of money for clothing, shoes, recreation and in-school expenses. Instead of relieving

the hardships of poverty, the services of educational, health, welfare, and nutrition programs sometimes serve to augment them. Poverty, and its pervasive effects, is the greatest non-biological cause of MR. This book should be of interest to professional persons in the field of MR who wish to understand the non-biological etiology of MR. (914 refs.) - *J. K. Wyatt.*

CONTENTS: A New Assessment; Poverty and Organic Impairment; The Effects of Cultural Deprivation on Intellectual Performance; Public Education and Mental Retardation: The Self-Fulfilling Prophecy Fulfilled; The Health Crisis of the Poor; Welfare: The Cycle of Dependency; Food Assistance Programs; Newark: A Case Study of Urban Poverty; and The Migrants: A Case Study of Rural Poverty.

1239 TROLLE, DYRE. A possible drop in first-week-mortality rate for low-birth-weight infants after phenobarbitone treatment. *Lancet,* 2(7578):1123-1124, 1968.

In low birth-weight infants treated with phenobarbitone during the first 3 days of life, the first-week-mortality rate was 34/1,000, whereas in controls the rate was 101/1,000. (4 refs.) - *Journal summary.*

Rigshospitalet
Copenhagen, Denmark

1240 WEIR, T. W. H., KERNOHAN, G. A., & MacKAY, D. N. The use of pericyazine and chlorpromazine with disturbed mentally subnormal patients. *British Journal of Psychiatry,* 114(506):111-112, 1968.

Pericyazine and chlorpromazine in syrup form were administered to 45 disturbed MR patients confined to a residential facility, and patient behavior was evaluated independently with a behavioral scale devised by staff members. Significant differences between active-syrup and no-syrup conditions were found. The differences between inert-syrup and no-syrup conditions were also significant for the group receiving chlorpromazine. Drug side-effects included withdrawal, seizures, and development of Parkinsonian-like symptoms. (2 refs.) *M. Drossman.*

Muckamore Abbey Hospital
Northern Ireland

1241 SAKUMA, MOTO. The use of carbamazepine in the control of the behavior of the idiot in a state of excitement. *Japanese Journal of Child Psychiatry,* 9(2):131-141, 1968.

Carbamazepine administered to epileptic MRs (IQ, less than 50) and non-epileptic MRs of the same IQ level exerted a suppressive action on excited behavior states in both groups. It was noted that those patients receiving the drug were less restless and were able to sit quietly for longer periods; therefore, carbamazepine appears to be a useful sedative for clinical observation. (17 refs.) *M. Drossman.*

Department of Neuropsychiatry
Tokyo University School of Medicine
Tokyo, Japan

Convulsive Disorders

1242 HENDRICK, E. BRUCE, & HARRIS, LEWIS. Post-traumatic epilepsy in children. *Journal of Trauma,* 8(4):547-556, 1968.

A survey of the incidence of post-traumatic epilepsy in children indicates the significance of this problem and its relationship to epilepsy in adults. The records of 4,465 cases of head injury in children of 15 years and under in Toronto, Canada, were analyzed for an 8-year period. Of 312 children who developed seizures after an injury, 44 died as a result of initial trauma. Of the 268 survivors, 174 were followed and results indicated that there was a much larger prevalence of early epilepsy due to trauma in very young children than was previously suspected. Early epilepsy occurred in 17% of those children who had head injuries and were under 1 year of age, and 75% of those were thought to have had minor traumas. If a child develops seizures at the time of injury or shortly thereafter, he is 9 times as likely to develop epilepsy later in life than a child who does not display these early seizures. Previous febrile convulsions do not appear to

influence the incidence of post-traumatic epilepsy and the occurrence of late seizures in patients having depressed fractures of the skull is very small. Of those patients with subdural hematomas, 40.8% had seizures; however, no patients with epidural hematoma developed epilepsy. In patients with brain damage, 19.3% had late epilepsy. Fifty percent of the children developing late epilepsy were thought to have had "minor head injuries," and 73% had no immediate significant CNS deficits, but many had had seizures at the time of injury. (11 refs.) - *B. Bradley.*

Paediatric Neurosurgery
Suite 1225--123 Edward Street
Toronto 2, Ontario, Canada

1243 Desordenes Convulsivos: Epilepsias (Convulsive disorders: Epilepsy). *Boletin Instituto Neurologico de Guatemala,* April(22):1-4, 1968.

Parents of epileptic children frequently suffer from fear or anxiety because of their lack of knowledge about epilepsy. These anxieties are often augmented by well meaning friends or neighbors who are also ignorant of the problem. An attempt to explain, in simple terms, the essential points about epileptic attacks is made and the discussion includes: the brain and IQ functions; the physical attributes of an attack; the classification of epileptic attacks; medical determination of epilepsy; treatment; and preventive measures which parents can take. (No refs.) - *K. Drossman.*

No address

1244 WADA, TOYOJI. Notes regarding psychiatric problems of epileptic children. *Japanese Journal of Child Psychiatry,* 9(2): 78-85, 1968.

The total number of epileptic children with psychiatric problems in very small and many of these problems are due to improper diagnosis, mistakes in drug dosage, or environmental maladjustments. A new system of social care and epileptic treatment is urged for Japan. (8 refs.) - *M. Drossman.*

Department of Neuropsychiatry
Tohoku University School of Medicine
Tohoku, Japan

1245 *The Juvenile with Epilepsy: Perspective on Employment and Life Aspirations.* (Final Report), Epilepsy Foundation of America, Washington, D. C., 1967, 36 p.

An investigation of high school students with epilepsy in regard to their present vocational situations and their future hopes revealed that they recognized the existence of a vocational service gap in present student guidance arrangements regarding their particular problem; and that in spite of the fact that many life experiences have been confusing and bewildering, the students frequently had realistic perceptions of their problems and could request and benefit from organized vocational help programs. Questionnaires and semi-structured interviews were used to obtain data on 67 Ss (CA 15-20 yrs) who represented 4 divergent geographical areas. Although the findings were contradictory, they reflected feelings of insecurity about the Ss own unpredictability, and about their future. Ss from higher socioeconomic families had greater self assurance about their life prospects and vocational futures, and they were more articulate about their feelings than were Ss from disadvantaged socioeconomic circumstances. Ninety percent of the Ss from a county with an excellent vocational rehabilitation school relationship were unaware that their school offered a special guidance program to help with problems that might accompany epilepsy. The findings of this study point out a need for the rapid development of systematic methods which will identify persons needing help, and for the identification and early provision of appropriate forms of counseling assistance for epileptic students. (No refs.) - *J. K. Wyatt.*

1246 LOISEAU, P., VITAL, Cl., DE BOUCAUD, P., FENELON, J., & ARNE, L. Etude anatomo-clinique d'un cas d'hemiplegie-epilepsie avec movements anormaux. Atrophie cerebelleuse croisee (Anatomical and clinical study of a case of hemiplegia-epilepsy with abnormal movements. Crossed cerebellar atrophy). *Revue Neurologique,* 118(1):77-82, 1968.

A 25-year-old woman with right hemiplegia and epilepsy from birth was found on postmortem to have right cerebellar atrophy. This condition is usually associated with infantile cerebral hemiplegia and consists of the atrophy of l cerebellum and the cerebral hemisphere of the opposite side. The autopsy and brain histology studies of this patient revealed a grossly malformed left thalamus, atrophy of the left hemisphere, atrophy of

the right cerebellum, demyelinization, disappearance of neurons of the Sommer section, and other abnormalities. It is indicated that atrophy occurs only with severe brain damage, takes years to develop, is etiologically related to previously existing massive destruction of cerebral-cerebellar connections, and can be diagnosed only on autopsy. (10 refs.) - *M. T. Lender.*

No address

1247 NELSON, DEWEY A., & RAY, CHARLES D. Respiratory arrest from seizure discharges in limbic system. *Archives of Neurology,* 19(2):199-207, 1968.

Respiratory arrest was produced by electrical stimulation of the limbic system in 1 patient and associated with seizure discharge in another, and appeared to be an integral part of each seizure pattern. Brain probes were implanted in a 13-year-old girl with uncontrolled seizures (some manifest by periods of eye blinking, lip smacking, and disorientation) and stimuli in or near the left amygdaloid nucleus produced either inspiratory or expiratory arrest depending upon the phase when stimuli were applied. During the period of after-discharge the patient continued to be disoriented and apneic. A 50-year-old man had 9 episodes of apnea not associated with grand mal seizures and 1 EEG during such an episode was a low voltage tracing with bursts of 6 to 14/second spontaneous spindle-like activity while his other tracings showed only temporal spiking. The findings in these cases were in accord with those of previous animal and human limbic stimulation reports. (25 refs.) - *E. L. Rowan.*

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Augustine Cut-Off
Wilmington, Delaware 19803

1248 ROSSI, G. F., WALTER, R. D., & *CRANDALL, P. H. Generalized spike and wave discharges and nonspecific thalamic nuclei. *Archives of Neurology,* 19(2):174-183, 1968.

A relationship between thalamic and generalized epileptic discharge was demonstrated on simultaneous EEG recordings of standard scalp leads and stereotaxically implanted subtelencephalic (limbic and thalamic) electrodes in 5 patients with generalized spike and wave discharges and clinical episodes of altered consciousness and complex motor behavior. Spike and wave complexes were found to originate in both telencephalic and diencephalic structures, involve both orders, or remain localized. Thalamic participation was not essential to generalized activity but enhanced the form, rhythm, and synchrony of spike and wave patterns when it did occur. If the nonspecific thalamic nuclei are shown to contribute to the generation and/or regulation of generalized epileptic discharge, then selective neurosurgical destruction may be an effective means of seizure control. (30 refs.) - *E. L. Rowan.*

*Department of Surgery/Neurosurgery
UCLA School of Medicine
Los Angeles, California 90024

1249 GRAMCKO, ADOLFO ARISTEGUIETA, & YANES, RAQUEL VALERY. Un caso de conducta paroxistica tratado combinadamente con hipnosis y psicoterapia (A case of paradoxic conduct treated by hypnosis and psychotherapy). *Ninos,* 22(3):25-43, 1968.

A 15-year-old MR epileptic boy was treated by hypnosis and psychotherapy after being confined for wounding a friend with a gun. The boy was delivered by forceps and was anoxic at birth. As an infant, he was a poor sleeper and was given Luminal; he had constant digestive upsets and enuresis until age 12. At 6 years of age, he had epileptic convulsions which were treated with Mesantoina. At 8, the convulsions ceased; however, severe psychological disturbances remained as sequelae of these epileptic seizures. His behavior included hyperactivity and impertinence accompanied by school difficulties. A program of hypnosis and psychotherapy was instituted to control his social difficulties, and after 16 months, much improvement was noted, both in his physical characteristics and in his interpersonal relations. This boy may now be able to take his place in society as a useful adult. (No refs.) *K. Drossman.*

No address

1250 LIVINGSTON, SAMUEL. Treatment of grand mal epilepsy: Phenobarbital versus diphenylhydantoin sodium. *Clinical Pediatrics,* 7(8):444-445, 1968.

Phenobarbital is the drug of choice in treatment of grand mal epilepsy because it is as effective as diphenylhydantoin sodium (DPH)

and has far fewer side effects. Mild and reversible drowsiness, hyperactivity, and skin rashes do occur with phenobarbital but are not as serious or fatal as may be the side effects of DPH. DPH overdosage in infants may not be manifested by the classic ataxia and diplopia; therefore, toxicity may not be apparent until the child is comatose. Cosmetically unappealing gingival hyperplasia occurs in approximately 1/3 of patients on DPH and irreversible hypertrichosis is not uncommon. In the absence of controlled studies to prove the superiority of either drug, phenobarbital should receive the first trial of therapy in children with grand mal seizures. (1 ref.) - *E. L. Rowan.*

The Johns Hopkins Hospital
Epilepsy Clinic
Baltimore, Maryland 21205

1251 BUCHTHAL, F., SVENSMARK, O., & SIMONSEN, H. Relation of EEG and seizures to phenobarbital in serum. *Archives of Neurology*, 19(6):567-572, 1968.

In 11 patients with grand mal seizures and paroxysmal EEG activity, phenobarbital in serum concentrations above 2-4 mg/liter eliminated clinical seizures and at a mean concentration of 10 mg/liter (range 3-22) reduced the paroxysmal activity to 1/10 its original incidence. In 3 patients whose medication subsequently was withdrawn, there was an increase in paroxysmal discharges and clinical seizures requiring at least twice the original stabilizing dose of phenobarbital for reestablishing control. Although constant serum levels were not attained for at least 3 weeks, control increased as the level built up, and no adverse side effects were reported. (5 refs.) - *E. L. Rowan.*

Institute of Neurophysiology
Juliana Maries Vej 36
21 Copehhagen, Ø
Denmark

1252 REYNOLDS, E. H., CHANARIN, I., & MATTHEWS, D. M. Neuropsychiatric aspects of anticonvulsant megaloblastic anemia. *Lancet*, 1(7539):394-397, 1968.

A 20-year-old girl with epilepsy controlled by phenytoin and primidone developed a drug-induced megaloblastic anemia. Successful treatment of the anemia with folic acid was associated with an increase in fit frequency and an improvement in her mental state. Subsequent administration of vitamin B_{12} precipitated a severe exacerbation of epilepsy. A similar sequence of events followed treatment with folic acid for a second episode of megaloblastic anemia. Seven other epileptic patients with drug-induced megaloblastic anemia had associated neuropsychiatric disorders which developed after the onset of epilepsy and the institution of anticonvulsant therapy. (9 refs.) - *Journal summary.*

The National Hospital
Queen Square
London W. C. 1, England

1253 HUTT, S. J., JACKSON, P. M., BELSHAM, A., & HIGGINS, G. Perceptual-motor behaviour in relation to blood phenobarbitone level: A preliminary report. *Developmental Medicine and Child Neurology*, 10(5):626-632, 1968.

Phenobarbitone was administered to 4 adult volunteers in doses similar to those used for control of grand mal seizures in adult epileptics. Blood-levels of phenobarbitone were determined at selected points during and again after the study, which lasted for a month. Perceptual motor performance was measured on 6 tasks before the study began and within 24 hours of each blood sample being taken. Four factors were found to be important in determining level of performance: the blood-level of the drug; the difficulty; the duration of the task; and the degree of external constraint (particularly social constraints) being exercised over performance. (8 refs.) - *Journal summary.*

Park Hospital for Children
Oxford, England

1254 Anticonvulsant therapy could be hard on nerves. *Medical World News*, 9(7):43, 1968.

A study conducted at Columbia University (New York) confirmed that in addition to causing injury to deep tendon reflexes, long-term use of diphenylhydantoin (a drug commonly used in epilepsy treatment) also impairs peripheral nerve conduction and causes muscle denervation. Duration of drug therapy was found to be a relevant factor; out of 20 Ss studied, 19 had been taking the drug for at least 10 years. Since the etiology of the nerve damage is unknown, it is advisable to limit daily dosage of diphenylhydantoin to 300 mg/day. (No refs.) - *J. P. West.*

1255 REISMAN, LEONARD E., & KASAHARA, SHOICHI. An unusual chromosome abnormality: 2/D translocation. *American Journal of Diseases of Children,* 115(5):625-628, 1968.

A translocation between the chromosome 2 and a D-group chromosome was seen in a 27-month-old girl. Since the child is profoundly retarded and has other congenital anomalies, the karyotype probably represents an example of "unbalanced" translocation heterozygosity. Possible explanations for the abnormal phenotype include inactivation of genetic material at the site of chromosomal breakage, deletion hemizygosity, transposition effect, and *aneusomie de recombinaison.* (11 refs.) *Journal summary.*

Child Evaluation Center
340 East Madison Street
Louisville, Kentucky 40202

1256 SHEPARD, THOMAS H., GARTLER, STANLEY M., LAGERBERG, EUGENE V., & PRICE, BARBARA. Chromosomal aberrations in 2 embryos from the same mother. An embryo with B trisomy and another with triploidy and associated cleft lip. *American Journal of Obstetrics and Gynecology,* 102(1):48-52, 1968.

Spontaneously aborted embryos from 2 pregnancies in the same mother were B trisomic and triploid with a cleft lip respectively. One embryo was 16 mm in crown-rump length (Horizon XV stage), had "severe postmortem autolysis," and was not histologically examined; however, abdominal wall and umbilical cord tissue were used for the chromosomal study and this embryo appeared to be an XXB trisomy with mosaicism in some cells. The second embryo (Horizon XX stage) was serially sectioned and a chromosomal analysis was made of the yolk sac and placenta. This embryo was 23 mm in crown-rump length, had a cleft palate and appeared to have all triploid cells. Leukocyte cultures of the parents and 1 normal son were normal diploid. There were no abnormal X-rays, infections, fever, or drugs associated with the 2 pregnancies, and family studies do not indicate the causative factor for the 2 cases. A previous report in the literature of a trisomic and a triploid in the same mother may suggest that there is a common etiology for both occurrences. (26 refs.) - *M. T. Lender.*

University of Washington
Seattle, Washington

1257 SMITH, DAVID W., DOCTER, JACK M., FERRIER, PIERRE E., FRIAS, JAIME L., & SPOCK, ALEXANDER. Possible localisation of the gene for cystic fibrosis of the pancreas to the short arm of chromosome 5. *Lancet,* 2(7563):309-312, 1968.

A child diagnosed as having cystic fibrosis of the pancreas (CF) was also found to have *cri-du-chat* syndrome with deletion of about 1/3 of the short arm of chromosome No. 5. The Spock test for CF heterozygosity was positive in only 1 parent, indicating that the patient received only a single CF-mutant gene. This data provides evidence for localization of the CF gene to the short arm of chromosome No. 5, the patient being hemizygous for the CF-mutant gene on the undeleted short arm of that chromosome. (5 refs.) - *Journal summary.*

University of Washington
School of Medicine
Seattle, Washington

1258 BUTLER, L. J., FRANCE, N. E., & JACOBY, N. M. An infant with multiple congenital anomalies and a ring chromosome in Group C (X-6-12). *Journal of Medical Genetics,* 4(4):295-298, 1967.

A female infant with unusual facies, hirsute forehead, thick joined eyebrows, large low-set ears, hypertrophied gums, high-arched hard palate, cleft soft palate, short neck, and hypotonic limbs was determined to have a ring chromosome in Group C. A precordial systolic murmur was also present and she consistently failed to gain weight. At 5 months of age the child died and at autopsy was found to have an ostium secundum cardiac defect, bicuspid pulmonary valve, cystic kidneys, lack of ovarian oocytes with normal stroma, and hypertrophied pylorus. Chromosome studies indicated a relatively normal percentage of sex chromatin bodies in buccal smears and skin fibroblast studies. Karyotypes of cells with 46 chromosomes revealed group C to have 15 normal members and an additional chromosome with a ring configuration. Since its size was 85% of number 6, it was felt to be a small deletion of an X or a similar size autosome. A group D chromosome also had abnormally long short-arms ending in satellites. Since the patient had some features of Turner's syndrome along with few recognizable oocytes, the ring chromosome could be

an X; however, since other congenital defects were also present it could be an autosome of the C group. (19 refs.) - *E. Gaer.*

Queen Elizabeth Hospital for Children
Hackney Road
London E. 2, England

1259 DE GROUCHY, J., ROY, C., LACHANCE, R., FREZAL, J., & LAMY, MAURICE. Trisomy partielle C par translocation t(Cp--; Bq+) (Partial Trisomy C by translocation t[Cp--; Bq+]). *Archives Francaises de Pediatrie,* 24(8):849-858, 1967.

A newborn boy with many malformations, height-weight hypertrophy, psycho-motor retardation, and microretrognathy was determined to have partial trisomy C. Hyperlaxity, simple dextrocardia, abnormal dermatoglyphs, and bone malformations were also observed. At the age of 4 1/2 months, the S had bone development comparable to that of a 7-month-old baby. Cytogenetic studies showed abnormally long B chromosome (46 XY, Bq+). The mother and a sister of the propositus had a translocation of the short-arm of a C chromosome (7 or 8) to the long arm of a B [46,XX,t(Cp--;Bq+)]. (11 refs.) - *M. T. Lender.*

Hopital des Enfants-Malades
75-Paris-XV^{e}, France

1260 DE GROUCHY, J., THIEFFRY, S., AICARDI, J., CHEVRIE, J. J., & ZUCKER, G. Trisomie partielle C par translocation t(Cq--; Dp+) et remaniement d'un C(p--q+) (Partial trisomy by translocation t[Cq--Dp+] and transformation of a C[p--q+]). *Archives Francaises de Pediatrie,* 24(8):859-868, 1967.

A 2-month-old boy with clinical features including a unilobed lung, 11 dorsal vertebrae, no automatic reflexes, peculiar facies, dwarfism, and microcephaly was determined to have partial trisomy C (a translocation of a long arm of a short C chromosome to the short arm of a D, [Cq--Dp+]). Karyotype studies showed that the father and a sister of the proband had the same pericentric inversion of the C chromosome and were carriers of the translocation. Another translocation of a large C chromosome is also present in the family and may be a pericentric inversion of a C chromosome probably a 6, (C[p--q+]). (17 refs.) *M. T. Lender.*

Hopital des Enfants-Malades
Paris-XV^{e}, France

1261 TOEWS, HELEN A., & JONES, HOWARD W., JR. Cyclopia in association with D trisomy and gonadal agenesis. *American Journal of Obstetrics and Gynecology,* 102(1):53-56, 1968.

A newborn girl with cyclopia, gonadal agenesis, microcephaly, a single proboscis, absent olfactory bulbs, a single optic nerve, and no hippocampus was determined to have D trisomy (47,XX,D+) after autopsy and leucocyte studies were done. It is believed that the gonadal agenesis may have been a manifestation of general underdevelopment in this syndrome and not an associated abnormality. (35 refs.) *M. Drosman.*

The Johns Hopkins University
School of Medicine
Baltimore, Maryland 21205

1262 SINHA, ANIL K., & BEJAR, RAFAEL L. Long Y-chromosome associated with enlarged satellites on a D-chromosome. *Southern Medical Journal,* 61(1):5-9, 1968.

Leukocyte chromosomes of a Caucasian MR boy revealed an elongated Y-chromosome and large satellites on the D-chromosome; however, although many features of Down's syndrome were present, the chromosomal basis of the condition is uncertain in this case. The Down's syndrome could have occurred if the long G-chromosome was the product of a translocation between the 2 long arms of 2 G-chromosomes, if 1 G-chromosome had a "cryptic" deletion or duplication, if the large satellites of a D-chromosome signified partial trisomy-21, or if the joint presence of elongated Y-chromosome and enlarged D-chromosome satellites could cause this condition. (21 refs.) *M. T. Lender.*

Cytogenetics Laboratory
Children's Hospital
Houston, Texas 77025

1263 TAYLOR, ANGELA I. Autosomal trisomy syndromes: A detailed study of 27 cases of Edwards' syndrome and 27 cases of Patau's syndrome. *Journal of Medical Genetics,* 5(3): 227-252, 1968.

Twenty-seven cases of Edwards' syndrome (trisomy 18) and 27 cases of Patau's syndrome (trisomy 13-15) were studied in detail and a considerable overlap of clinical features in the 2 disorders was determined. Parents and

Ss were given full blood group analysis including hemoglobins, haptoglobins, transferrins, and serum Gc group determinations. Dermatoglyphic, photographic, sex chromatin, and chromosome studies were conducted. Forty-six clinical features were examined and 44 occurred in both syndromes. Iris colobomata occurred only in Patau's syndrome while webbed neck appeared only in Edwards' syndrome. No effect of pregnancy order was seen in either of the diseases; however, maternal age is high in both disorders. Winter conception seems to be greater in the infants studied. Of the 27 cases of Edwards' syndrome, 78% had primary trisomy 18, and 7.4% were double aneuploids. One had 46 chromosomes with only 1 chromosome 18, and an extra abnormal medium-sized chromosome. Mosaics accounted for 7.4%, and 3.7% had normal chromosomes. Of 27 cases with Patau's syndrome, 19 (70.4%) had primary trisomy 13-15 (D), 3 (11.1%) had D/D interchange D trisomy, 1 (3.7%) was a mosaic, 1 had 46 chromosomes with a deleted short arm of a B chromosome (46,XY,Bp--), and 2 (7.4%) had normal chromosomes. The incidence of Edwards' syndrome is 1/6,766 live births and Patau's syndrome is 1/7,602. (130 refs.) - *M. Lender.*

Guy's Hospital Medical School
London, S. E. 1, England

1264 ALPERT, LAURENCE I., STRAUSS, LOTTE, & HIRSCHHORN, KURT. Neonatal hepatitis and biliary atresia associated with trisomy 17-18 syndrome. *New England Journal of Medicine,* 280(1):16-20, 1968.

Biliary atresia and neonatal hepatitis associated with the trisomy 17-18 syndrome (E-trisomy) was shown in a study of 19 autopsied and confirmed cases of trisomy 17-18 syndrome in which 7 cases of hepatitis were found. Extrahepatic biliary atresia was concomitant in 2 cases. The hepatic effects could result from an associated metabolic error or a developmental aberration related to the chromosomal abnormality. Infection in the susceptible fetus could be the cause of the hepatitis; however, the most likely explanation is that a virus caused both the chromosomal aberration and the hepatitis. Although virus isolation in these patients was unsuccessful the cyclic incidence and clustering of chromosomal aberration cases warrants further investigation. (17 refs.) - *M. T. Lender.*

Department of Pathology
Mount Sinai School of Medicine
100th Street and 5th Avenue
New York, New York 10029

1265 SINHA, ANIL K. Human ring chromosome syndromes: An "E" ring associated with an abnormal phenotype. *Acta Geneticae Medicae et Gemellologiae,* 17(3):487-494, 1968.

A 16-month-old girl with microcephaly, wide nasal bridge, epicanthal folds, weak lateral rectus eye muscles, dermatoglyphic abnormalities, and slow mental and physical development was determined to have a ring chromosome in the E group. This ring chromosome appeared in all cells examined and its size and shape remained constant; therefore, it is suggested that this ring has become a permanent part of the S's chromosomal complement and will continue to replicate throughout the patient's life. (11 refs.) - *M. Drosman.*

Texas Children's Hospital
Houston, Texas

1266 McDERMOTT, A., INSLEY, J., BARTON, MARGARET E., ROWE, PAMELA, EDWARDS, J. H., & CAMERON, A. H. Arrhinencephaly associated with a deficiency involving chromosome 18. *Journal of Medical Genetics,* 5(1):60-67, 1968.

Arhinencephaly was associated with a chromosome 18 deficiency in a male infant who died from pneumonia at 6 days of age. Chromosome analyses revealed a chromosome 18 with short arms that were 1/2 normal length. The mother had an identical chromosome 18 aberration, but was phenotypically normal. The defect in the mother may have occurred during gametogenesis in 1 of her parents, or early in her development as the grandparents of the proband had normal karyotypes. This is the third case of arhinencephaly found to be associated with a chromosome 18 deficiency, but a completely genetic explanation or etiology cannot be described at this time. (17 refs.) *M. T. Lender.*

Institute of Child Health
Birmingham, England

1267 PEPLER, W. J., SMITH, MOYRA, & VAN NIEKERK, W. A. An unusual karyotype in a patient with signs suggestive of Down's syndrome. *Journal of Medical Genetics,* 5(1): 68-71, 1968.

An institutionalized female patient with symptoms suggestive of Down's syndrome was found to have a modal number at 47 chromosomes and an extra chromosome that was indistinguishable from the F group. The palm prints were

also indicative of mongolism. The extra chromosome may be a pseudoisochromosome that resulted from the centric fusions of 2 No.21 chromosomes, or an interchange chromosome of the 21/22 type. Further possibilities are that it resulted from an interchange between No. 21 and another chromosome, or that 1 parent was a mosaic and the other had an isochromosome for the long arm of No. 21. The most likely possibility is that the extra chromosome is an isochromosome for the long arms of No. 21 which resulted from centromere misdivision. (10 refs.) - *M. T. Lender.*

University of Pretoria
Pretoria, South Africa

1268 SHOKEIR, M. Coital frequency and Down's syndrome. *Lancet,* 2(7577):1081, 1968. (Letter)

A 1 1/2-year study of 31 mongoloids disclosed that 9 (29% as compared to 3% of comparable normal Ss) were illegitimate babies born to mothers less than 20 years old; this would indicate that coital irregularity may be related to Down's syndrome. (1 ref.) *J. P. West.*

Department of Human Genetics
University of Michigan
Ann Arbor, Michigan 48104

1269 MILLER, ROBERT W., & FRAUMENI, JOSEPH F., JR. Down's syndrome and neonatal leukaemia. *Lancet,* 2(7564):404, 1968. (Letter)

Down's syndrome was present in 8 of 44 (1/5.5) infants who died within 28 days of birth of leukemia between 1960 and 1964 in the United States. Although intervening variables are thought to have influenced this estimate, the correlation between Down's syndrome and leukemia suggests G-trisomy (or other trisomy) sensitivity to virus induced transformation and warrants further investigation. (3 refs.) - *J. P. West.*

Epidemiology Branch
National Cancer Institute
Bethesda, Maryland 20014

1270 BACK, F., DORMER, P., BAUMANN, P., & OLBRICH, E. Zur Problematik der Chromosomenautoradiographie: Autoradiographische Untersuchungen an den G-Chromosomen bei Mongolismus (The problem of chromosomal autoradiography: Autoradiography of the G-chromosomes in mongolism). *Humangenetik,* 4(4):305-319, 1967.

Cultures of blood cells from 3 mongoloid girls and 2 boys aged 3 to 5 years were labeled with tritiated thymidine and subsequent mitosis followed by autoradiography. Statistical analysis of the labeled mitotic figures showed that autoradiography is not a suitable technique for following DNA replication in chromosomes 21 and 22 from mongoloids. (43 refs.) - *K. Drossman.*

Institut fur Hamatologie der GSF
Landwehrstrasse 61
8 Munich 15, Germany

1271 PANT, SHYAM S., *MOSER, HUGO W., & KRANE, STEPHEN M. Hyperuricemia in Down's syndrome. *Journal of Clinical Endocrinology and Metabolism,* 28(4):472-478, 1968.

In 280 patients with Down's syndrome, levels of uric acid in serum were significantly higher in all age groups and in both sexes when compared to 298 control Ss. The variations in levels of uric acid in relation to age and sex in mongoloids, and the mean levels of uric acid in nonmongoloid retardates, were similar to those previously reported in an unselected population. Hyperuricemia was not observed in 27 patients with Klinefelter's syndrome, or in parents of mongoloids. No difference with respect to hyperuricemia was seen in mongoloids with chromosomal trisomy or translocation. The finding of excessive urinary excretion of uric acid suggests that, at least in some mongoloids, the hyperuricemia is related to overproduction of urate. (30 refs.) - *Journal abstract.*

*Walter E. Fernald State School
Box C
Waverley, Massachusetts 02178

1272 DOERY, J. C. G., *HIRSH, J., GARSON, O. M., & DE GRUCHY, G. C. Platelet-phosphohexokinase levels in Down's syndrome. *Lancet,* 2(7574):894-895, 1968.

Platelet phosphohexokinase (PHK) activity was measured in 10 patients with Down's syndrome (trisomy 21), who had previously been shown

to have a 50% increase in activity of the erythrocyte enzyme. In contrast to the erythrocyte result, platelet enzyme levels were normal. These findings fail to support the hypothesis that the increase in erythrocyte PHK is due to a direct gene-dose effect. (14 refs.) - *Journal summary.*

*University of Melbourne
Department of Medicine
St. Vincent's Hospital
Melbourne, Victoria, Australia

1273 VASSELLA, F., COLOMBO, J. P., GLOOR, R. D., & ROSSI, E. Untersuchungen uber den L-Tryptophanstoffwechsel bei Kindern mit Down-Syndrom (Analysis of L-tryptophan metabolism in children with Down's syndrome). *Helvetica Paediatrica Acta,* 23(4):419-428, 1968.

Urinary excretion of metabolites of the tryptophan-kynurenine pathway before and after an oral load with 100 mg/kg of L-tryptophan was measured in 13 infants and children with mongolism. No quantitative differences could be detected between "regular" trisomy 21 and trisomy 21 mosaicism; all values were within normal range. In particular the excretion of xanthurenic acid was not decreased. The results exclude a disorder of the tryptophan-kynurenine metabolic pathway in Down's syndrome. (21 refs.) - *Journal summary.*

Universitatskinderklinik Bern
Bern, Switzerland

1274 HARRIS, WILLARD S., & GOODMAN, RICHARD M. Hyper-reactivity to atropine in Down's syndrome. *New England Journal of Medicine,* 279(8):407-410, 1968.

Patients with Down's syndrome respond with abnormally great mydriasis to conjunctivally instilled atropine. This finding has been attributed to a structural anomaly of the iris. To define the systemic reactivity to atropine in mongolism, the effects of intravenous atropine on heart rate were determined in 3 age-matched groups: 12 patients with Down's syndrome; 10 retardates without the syndrome; and 10 normal Ss. The patients with Down's syndrome, although reacting normally to atropine's bradycrotic or vagotonic action, had a markedly increased (twice normal or greater) sensitivity to the cardioacceleratory effects of atropine. This increased sensitivity, a pharmacogenetic abnormality, may result from the genetic imbalance imposed by an extra chromosome 21 in Down's syndrome. (11 refs.) - *Journal abstract.*

University of Illinois Research and
Educational Hospitals
840 South Wood Street
Chidago, Illinois 60680

1275 INGALLS, THEODORE H., & HENRY, THOMAS A. Trisomy and D/G translocation mongolism in brothers. *New England Journal of Medicine,* 278(1):10-14, 1968.

The unique occurrence of D/G translocation in 1 and trisomy in the second of 2 brothers with Down's syndrome is reported. Blood samples from 7 other members of the family showed normal chromosomal patterns. Karyotypes on aneuploid cells revealed no minor mosaic patterns. The chromosomal patterns observed, as well as analysis of the family history, suggest that ecologic as well as genetic determinants have to be considered in speculating on the pathogenesis of Down's syndrome. (12 refs.) - *Journal abstract.*

Epidemiology Study Center
113 Lincoln Street
Framingham, Massachusetts 01701

1276 REFETOFF, SAMUEL, & SELENKOW, HERBERT A. Familial thyroxine-binding globulin deficiency in a patient with Turner's syndrome (XO): Genetic study of a kindred. *Lancet,* 278(20):1081-1087, 1968.

A kindred with deficiency of thyroxine-binding globulin (TBG) is presented in which the propositus also has XO Turner's syndrome. The pattern of inheritance supports previous reports that TBG activity is X-chromosome linked. This genetic anomaly appears to be specific for TBG since no alterations in other hormone-binding proteins could be demonstrated. No inhibitor of thyroxine (T_4) binding to TBG could be denonstrated. The presence of approximately 1/2 the normal maximal T_4-binding capacity of TBG in heterozygous females is compatible with Lyon's hypothesis of random and permanent inactivation of 1 X chromosome during early fetal development of female somatic cells. There is no evidence of peripheral tissue thyroxine deficiency despite an absence of binding of T_4 to the TBG zone and low total circulating T_4. Daily hormonal utilization is normal. TBG

deficiency in Turner's syndrome has not previously been described. The abnormality of TBG binding permitted identification of the maternal origin of the single X chromosome in the propositus. (27 refs.) - *Journal abstract.*

721 Huntington Avenue
Boston, Massachusetts 02115

1277 DONALDSON, CHARLES L., WEGIENKA, LAURENCE C., MILLER, DANIEL, & FORSHAM, PETER H. Growth hormone studies in Turner's syndrome. *Journal of Clinical Endocrinology and Metabolism*, 28(3):383-385, 1968.

Fourteen Ss with Turner's syndrome were studied before and after insulin hypoglycemia: 11 had brisk growth hormone responses as measured by radioimmunoassay and 3 had limited responses with maximum values below 10 mμg/ml. Twelve healthy female control Ss of normal stature were studied in the same manner and 11 had brisk responses, with 1 showing a limited response. No one in either group had complete absence of growth hormone. Thus, some defect other than growth hormone deficit must be implicated in the short stature of patients with Turner's syndrome. (18 refs.) *Journal abstract.*

University of California Medical Center
San Francisco, California 94122

1278 RICHARDS, B. W. Maternal age influence and zygotic origin in Klinefelter and mongol mosaicism. *Journal of Mental Deficiency Research*, 12(1):84-86, 1968.

Further analysis of previously published data on the effect of maternal age at birth and the incidence of mongolism and Klinefelter's syndrome separated mosaic from trisomic individuals by use of the hypothesis that equally strong maternal influence in both groups would mean that trisomic zygotes underwent mitotic errors to become mosaics, but that diminished maternal influence in mosaic groups would mean that these individuals started as normal zygotes. The mean maternal age at birth of both Klinefelter and mongoloid mosaics was older than normal Ss, but younger than trisomics; therefore, this proportion of the difference was due to mitotic error in normal zygotes, and was estimated to be 51% in Klinefelter's syndrome and 25% in mongolism. With comparable samples and better controls, it may be possible to estimate the zygotic origin of many different forms of mosaicism. (6 refs.) - *E. L. Rowan.*

St. Lawrence's Hospital
Caterham, Surrey, England

1279 FRØLAND, A., SANGER, RUTH, & RACE, R. R. Xg blood groups of 78 patients with Klinefelter's syndrome and of some of their parents. *Journal of Medical Genetics*, 5(3):161-164, 1968.

The use of Xg blood groups to trace the origin of the extra X chromosome material in Klinefelter's syndrome and other sex chromosome abnormalities is described. A series of 78 Danish males (CA 1-80 yrs) with Klinefelter's syndrome and their available parents were analyzed through cultured blood cell and fibroblast studies. Autosomes were found to be normal in all patients. Sex chromosome complements included: XXY (68 Ss); XXXY (2 Ss); XXXXY (4 Ss); XX (2 Ss); XY/XXY (1 S); and XY/XX/XXY (1 S). In 11 patients the origin of the extra sex chromosomal material could be determined: in 4 patients with 47,XXY karyotypes, the X chromosomes were from both parents; 6 patients with XXY karyotypes had the extra X from their mother; and in 1 patient with a 49,XXXXY karyotype, all 4 X chromosomes were from the mother. It appears that nondisjunction leading to extra X chromosomes can occur in either spermatogenesis or oogenesis; however, parental age, especially maternal age, plays a highly significant role in the etiology of this disorder. (19 refs.) *M. Drossman.*

Institute of Medical Genetics
Copenhagen, Denmark

1280 FINLEY, WAYNE H., FINLEY, SARA C., COCORIS, JOHN G., & PITTMAN, CONSTANCE S. Four stem-line mosaicism (XO/XY/XXY/XYY) in an infant with ambiguous external genitalia. *Journal of Clinical Endocrinology and Metabolism*, 28(2):239-243, 1968.

A 5-week-old infant with ambiguous external genitalia and a negative sex chromatin pattern is described. The karyotype was interpreted as XO/XY/XXY/XYY mosaicism in cells derived from leukocyte cultures and XO/XY in cells derived by culture of tissue biopsies. Such a mosaic karyotype may be explained by mitotic nondisjunction involving both the X

and Y chromosomes in more than 1 cell. At laparotomy, a rudimentary fallopian tube was found in 1 inguinal region and a round ligament in the other. No gonads or uterus were detected. When examined at 3 years of age, this child was below the third percentile in height and weight but appeared normal in her mental development. (9 refs.) - *Journal abstract.*

University of Alabama Medical Center
Birmingham, Alabama 35233

1281 JACOBS, PATRICIA A., PRICE, W. H., COURT BROWN, W. M., BRITTAIN, R. P., & WHATMORE, P. B. Chromosome studies on men in a maximum security hospital. *Annals of Human Genetics,* 31(4):339-358, 1968.

Karyotypic analyses of 315 men at a special maximum security hospital for dangerous, violent, or criminal behavior (2/3 also MR) revealed 16 (5.1%) with an abnormal chromosome complement. Nine men (2.9%) with XYY sex chromosomes were significantly taller than the average inmate, no different in intelligence, and noted to display antisocial behavior. Chromatin positive males (1 48/XXYY, 1 47/XXY, and 1 46/XY/47/XXY/48/XXXY mosaic) were of the same proportion (1%) as found in ordinary hospitals for mentally subnormal. The other 4 men with autosomal abnormalities constituted too small a sample from which to infer causality. On the basis of this and other chromosomal studies on the criminally subnormal, a propensity for antisocial behavior may be genetic rather than environmental. (17 refs.) - *E. L. Rowan.*

Clinical and Population Cytogenetics
Research Unit
Western General Hospital
Edinburgh, Scotland

1282 PRICE, W. H. The electrocardiogram in males with extra Y chromosomes. *Lancet,* 1(7552):1106-1108, 1968.

The electrocardiogram (ECG) has been examined in 20 males with the 47,XYY chromosome complement and in suitably matched controls. Males with the 47,XYY chromosome complement were found to have prolonged P-R intervals, an increased incidence of secondary R waves in lead V_1, and notching with reduction in the size of the S wave in V_1. These findings are discussed and it is suggested that cardiac conduction, and atrioventricular conduction in particular, is influenced by the possession of a Y chromosome, the P-R interval in the ECG being longer in males with 1 Y chromosome than in females and even longer in males with 2 Y chromosomes. (5 refs.) *Journal summary.*

Clinical and Population Cytogenetics
Research Unit
Western General Hospital
Edinburgh 4, Scotland

1283 LEFF, J. P., & SCOTT, P. D. XYY and intelligence. *Lancet,* 1(7543):645, 1968. (Letter)

Case material is presented on the fifth known adult XYY case, above average in intelligence, outside an institution. This 26-year-old Irish male on probation for embezzlement as a first offense was referred for aggressive fantasies and mild depression. His personality also showed immaturity, inferiority feelings, mild hypochondriasis, and obsessional features. He had an IQ of 118, his height was 6 feet, 6 inches, and his genitalia and EEG were normal. (8 refs.) - *J. Snodgrass.*

Maudsley Hospital
London S. E. 5, England

1284 MacLEAN, N., COURT BROWN, W. M., JACOBS, PATRICIA A., MANTLE, D. J., & STRONG, J. A. A survey of sex chromatin abnormalities in mental hospitals. *Journal of Medical Genetics,* 5(3):165-172, 1968.

Sex chromatin studies were done on 6,000 male and 7,207 female mental hospital patients; 30 male Ss were chromatin positive and 17 of the female Ss had 2 sex chromatin bodies in some or all of their cells. None of the women were negative. The incidence of sex chromatin abnormalities in this population is significantly higher than in the newborn population. Of the 30 male Ss, 19 were XXY; 5 were XY/XXY; 2 were mosaics; and 1 patient was an XXXY/XXXXY. Ten of the male Ss were MR and 2 of these had schizophrenia; 11 were schizophrenic only; 3 were epileptic, and the remainder had a variety of disorders. Of the 17 female Ss, 4 were MR; 6 were schizophrenic; and 3 had depressive mental illness. Additional X chromosomes appear to disturb mental development, but may not be the main etiologic agent; the extra chromosome may simply exaggerate inborn predispositions. (33 refs.) - *M. Drosman.*

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1285 TAYLOR, ANGELA I., & MOORES, ELIZABETH C. A sex chromatin survey of newborn children in two London hospitals. *Journal of Medical Genetics*, 4(4):258-259, 1967.

Of 9,688 (4,754 female; 4,934 male) live hospital births, 7 females and 13 males had abnormal sex chromatin. XY chromosomes were found in 2 of 5 females who were sex chromatin negative; 1 was presumed to be a case of testicular feminization and the other had lipoid adrenal hyperplasia. An XXX configuration was presumed for 2 girls who had 2 sex chromatin masses. The remaining 3 have not been followed up. Of 11 males with single sex chromatin, 2 had Down's syndrome, 2 had an XXY configuration, 1 was an XY/XXY mosaic, and 1 was a 21 trisomy/XXY with 48 chromosomes. The remainder and 1 male with 2 sex chromatin masses appeared normal at birth and have yet to be followed up. Sex chromosome anomaly incidences are given from the literature. (10 refs.) - *E. Gaer.*

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1286 FEDERMAN, DANIEL D. *Abnormal Sexual Development: A Genetic and Endocrine Approach to Differential Diagnosis.* Philadelphia, Pennsylvania, W. B. Saunders, 1967, 206 p. $8.75.

Abnormal sexual development can result from disorders of gonadal differentiation or development, or from functional disturbances in the internal or external endocrine environment of the fetus. The major disorders of gonadogenesis are usually accompanied by chromosomal abnormalities and include: Klinefelter's syndrome; Turner's syndrome; pure gonadal dygenesis; true hermaphroditism; and atypical or mixed gonadal dysgenesis. Disorders of endocrinology appear to result from androgen deficiency in males, androgen excess in females, and defects in cortisol biosynthesis. These nondevelopmental endocrine disorders include familial male pseudohermaphroditism, nonadrenal female pseudohermaphroditism, and the congenital adrenal hyperplasias. Diagnostic examinations of ambiguous sexual development at birth should include a systematic physical examination of the size of the phallus, the position of the urethral orifice, and the extent of labioscrotal fusion. Physicians should obtain information about the presence of testes in the scrotum, the presence of a uterus, and the presence of anomalies. Since the achievement of normality is a vain hope in many of the disorders of sexual development, treatment ambitions and therapy goals should be based on a realistic appraisal of treatment prognosis. This book should be of interest to general physicians, urologists, internists, gynecologists, pediatricians, and medical students with a clinical concern for sensitive and precise diagnosis and rational therapy (232 refs.) - *J. K. Wyatt.*

CONTENTS: Normal Sexual Differentiation; Cellular Division and the Production of Chromosomal Errors; Disorders of Gonadal Development: Klinefelter's Syndrome; Disorders of Gonadal Development: Gonadal Dysgenesis (Turner's Syndrome); Disorders of Gonadal Development: True Hermaphroditism; Disorders of Gonadal Development: Mixed Gonadal Dysgenesis; Dysgenetic Male Pseudohermaphroditism; Agonadism; Functions of the Sex Chromosomes; Disorders of Fetal Endocrinology: Male Pseudohermaphroditism; Disorders of Fetal Endocrinology: Female Pseudohermaphroditism; Summary of Disorders of Sexual Development; The Differential Diagnosis of Ambiguous Sexual Development at Birth; Disorders of Puberty in Phenotypic Females; Disorders of Puberty in Phenotypic Males; and The Therapy of Abnormal Sexual Development.

1287 JONES, HOWARD W., & BARAMKI, THEODORE A. The basic forms of chromosomal aberrations. In: Barnes, Allan C., ed. *Intra-Uterine Development.* Philadelphia, Pennsylvania, Lea & Febiger, 1968, Chapter 18, p. 327-361.

The basic forms of chromosomal aberrations occur in numbers of chromosomes, in individual chromosome structure, and chromosomal mosaicism. Clinical syndromes associated with abnormalities of the sex chromosomes include: ovarian agenesis; Turner's syndrome; Klinefelter's syndrome; true hermaphroditism; XX males; poly-X females; and male hermaphroditism. Abnormalities of the autosomes may result in mongolism, the E18-trisomy syndrome, the D_1-trisomy syndrome, the D_2-trisomy syndrome, D13-15 anomalies, the *cri-du-chat* syndrome, and group C6-12 anomalies. The routine determination of sex chromatin in all newborn children would be a rewarding procedure which would permit the early identification of sex chromatin anomaly and early identification would allow for early initiation of therapy. (54 refs.) - *J. K. Wyatt.*

1288 REDDING, AUDREY, & HIRSCHHORN, KURT. Guide to human chromosome defects. *Birth Defects Original Article Series,* 4(4): 1-16, 1968.

A guide to human chromosome defects is presented and is directed especially to persons who have been advised by their physicians to seek genetic counseling. Doctors, biologists, and health personnel in general should also find this booklet interesting and extremely readable. Subjects covered include: cytogenetic defects; genetic counseling; chromosomal abnormalities; cell divisions and abnormalities of cell divisions; trisomy; XX and Y chromosomes; and mosaicism. Each subject has an explanation and examples. Several diagrams, simplified and understandable, are also presented with detailed descriptions. Possible causes of chromosomal abnormalities are briefly discussed. (No refs.) *K. Drossman.*

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1289 EMERIT, INGRID, DE GROUCHY, J., VERNANT, P., & CORONE, P. Chromosomal abnormalities and congenital heart disease. *Circulation,* 36(6):886-905, 1967.

Patients (1,600) were examined for the incidence of classical chromosome syndromes and other cytogenetic abnormalities concomitant with congenital heart disease. Some 275 congenital heart disease patients were karyotyped and of 119 patients with known syndromes, 42 were found to have chromosomal aberrations. Abnormal karyotypes were found in 10 of 100 patients with symptoms not associated with a known syndrome. A group of 56 patients was karyotyped because other members of their families also had congenital heart disease. Three of these patients were found to have chromosomal abnormalities. In general, 3-5% of the chromosomal abnormalities could have caused congenital heart disease; however, the relation could be greater if the many patients with chromosomal abnormalities who died before age 3 were included in such a study. (29 refs.) *M. T. Lender.*

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1290 UCHIDA, IRENE A., HOLUNGA, ROBERTA, & LAWLER, CAROLYN. Maternal radiation and chromosomal aberrations. *Lancet,* 2(7577):1045-1049, 1968.

A prospective study of women who had been exposed to abdominal radiation was set up to test the hypothesis that maternal radiation increases the risk of nondisjunction in subsequent pregnancies. Children conceived after diagnostic radiation exposure of the mother were compared with children born before exposure. They were matched for maternal age. There were 972 children in each category. A slight decrease was noted in the number of males born after irradiation. Stillbirths were more common among controls, but the maternal age for stillborns in the post-irradiation group was higher. A significantly greater number of trisomic children were born after maternal radiation exposure. Mean maternal ages at time of birth and at time of radiation exposure before birth of children with chromosomal aberrations were significantly greater than those for the entire sample. It is concluded that women exposed to abdominal radiological examinations run an increased risk of producing nondisjunctional offspring, particularly in their late reproductive years. (8 refs.) - *Journal summary.*

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1291 EBENEZER, LILY N., & SADASIVAN, G. Chromosome damage in X-ray technicians. *Indian Journal of Medical Research,* 56(7): 1023-1027, 1968.

Studies were performed to reveal chromosomal damage resulting from the low doses of radiation to which X-ray technicians are exposed. Blood leukocyte cultures and chromosome studies were made on 10 technicians who had between 7 months and 25 years of exposure to radiation. There was a total of 103 chromatid breaks and 43 chromosomal aberrations among the 10 Ss (20 to 50%, as opposed to controls). Leukemia or other malignant pathologies may develop as a result of changes in chromosome or chromatid morphology. Chromosomal examination of persons exposed to radiation may be a more reliable indicator than the film badge method for checking exposure levels, and it may yield valuable information about the malignancy-producing potential of X-rays. (19 refs.) - *M. T. Lender.*

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1292 CROW, JAMES F., & NEEL, JAMES V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, 578 p. $14.50.

Recent technological advances have led to rapid growth in the knowledge of human genetics as evidenced by the 365 papers presented at the Third International Congress of Human Genetics held in Chicago, Illinois, September 5-10, 1966. Molecular genetics, techniques to study the gene and chromosome, epidemiological investigation, computer technology, and the more refined systems of classification based on improved technical and clinical competence have contributed to man's knowledge of himself. The role of the computer has become increasingly important in the compilation and analysis of extremely complex data. Not only geneticists and biochemists, but clinicians dealing with all age-groups, epidemiologists, engineers, and philosophers of science should be vitally interested in the composition of the future generations of man and their role in its genesis. (1,215 refs.) *E. L. Rowan.*

CONTENTS: Opening Plenary Session; Clinical Genetics I; Cytogenetics; Biochemical Genetics; Immunogenetics; Population Genetics; Human Evolution; Clinical Genetics II; and Workshop on Computer Methods.

1293 SCRIVER, CHARLES R. Treatment in medical genetics. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 45-56.

The present therapeutic approach to genetic disease in man is modification of the environment in which the mutant organism lives (environmental engineering); however, in the future, science may be able to attack the genetic apparatus directly (genetic engineering). Environmental manipulation to restore normal biochemical balance may be done in 4 ways: substrate restriction to reduce the accumulation of a deleterious product; product replacement to correct a primary deficit; coenzyme supplementation to activate a lagging process; and enzyme replacement to compensate for an unavailable endogenous source. Genetic engineering may be able to replace deficient protein or enzymes, regulate enzymatic activity to induce or repress protein synthesis, or directly transform gene replication. This scientific and humanitarian treatment of patients born with hereditary disease will pose a challenge to future generations as the number of aberrant phenotypes increases. (44 refs.) - *E. L. Rowan.*

1294 FERGUSON-SMITH, MALCOLM A. Clinical cytogenetics. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 69-75.

The clinically practical cytogenetic techniques of sex chromatin determination and karyotypic analysis provide information about the diagnosis and genetic prognosis of many chromosomal aberrations. Patients with mongolism, leukemia, intersex, Klinefelter's syndrome, Turner's syndrome, and multiple congenital anomalies should be investigated along with their parents in order to identify mosaicism and/or partial translocations which would be of value in formulating prognosis and genetic counseling. An International Registry of Human Chromosome Aberrations would provide more complete information about the distribution and clinical manifestations of abnormal chromosomes and perhaps suggest ways to prevent their recurrence. (9 refs.) *E. L. Rowan.*

1295 UCHIDA, IRENE A. Role of dermatoglyphics in clinical cytogenetics. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 77-82.

Even without cytological data, dermatoglyphic patterns may confirm the clinical diagnosis of autosomal trisomies D_1, 18, and mongolism. Characteristic dermatoglyphics may be able to differentiate the aneuploidies of small acrocentric chromosomes where cytogenetic technique is not yet sophistocated enough to pick up the aberrations. Detection of translocation carriers, mosaics, and individuals susceptible to nondisjunction might be possible although parents and siblings of 228 trisomic mongoloids were not dermatoglyphically different from controls. The great value of dermatoglyphics may be as a screening method for retardates and their families so that the more expensive and time-consuming chromosomal examinations will be more fruitful. (5 refs.) *E. L. Rowan.*

1296 MOHR, JAN. Genetic counseling. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 37-43.

With recourse to national laws which provide sterilization and therapeutic abortion in the control of physical and mental aberrations, Danish genetic counselors seemingly have the tools to control the population frequencies of these disorders. Despite provisions for sterilization of the "feeble-minded" (IQ less than 75), this criterion alone is rarely used and the majority of procedures are done on medical grounds. Most referrals to the Institute of Medical Genetics in Copenhagen concern the risk of repetition following the birth of a defective child. The real benefit of counseling, then, is to the family in which genetic disease is controlled or unwarranted anxiety alleviated. Given predictions based on probability, both patients and physicians regard genetic counseling as an inexact science, and they will continue to do so until technology provides a safe method for diagnosis of the genetic constitution of the early embryo. (8 refs.) - *E. L. Rowan.*

1297 CARTER, CEDRIC O. Comments on genetic counseling. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 97-100.

A 4-year follow-up of 169 couples who received genetic counseling (most following the birth of 1 or more abnormal children) revealed that genetic prognoses had been given with reasonable accuracy and that the couples had made responsible decisions regarding them. Only 1/4 of couples with a high-risk of recurrence (greater than 1/10) decided to take that risk, while 3/4 of those with a low-risk of recurrence decided to have further children. Thirty-three children of whom 6 were abnormal (1/5.5) were born to the 74 high-risk families, and 81 children of whom 2 were abnormal were born to the 95 low-risk families. In view of the growing demand for genetic counseling and its proven value, at least 1 medically trained geneticist should be available in each university medical school. (1 ref.) - *E. L. Rowan.*

1298 PFEIFFER, R. A. Inborn autosomal disorders: The phenotype of autosomal aberrations. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 103-121.

The cytogenetic findings of autosomal aberrations do not always have a 1:1 relationship with clinical signs, and more empirical evidence must be collected before the chromosomal loci of physical traits are identified. Autosomal variants, which include the enlargement and stabilization of secondary constrictions, variation in length or deletion of the short arms of acrocentrics, and the presence of supernumerary chromosomes, seem to have no specific if any phenotypic effect and may be examples of normal polymorphism. Known phenotypes, the classic trisomies 21, 18, and D_1 and deficiencies of chromosomes B4, B5, 18, and 21, have mosaic variants with diminution of both quantitative and qualitative expressivity and partial aberrations with a few distinct symptoms. Symptoms may be chromosome specific so that a specific gene locus is implicated, physiognomic where multiple factors seem involved in a characteristic pattern, or common to many chromosomal aberrations. Continued documentation of trait disorders in autosomal variants should result in the definition of limited centers of action. (76 refs.) - *E. L. Rowan.*

1299 GERMAN, JAMES. Autoradiographic studies of human chromosomes. I. A review. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 123-136.

Autoradiography has made significant contributions to the understanding of cell physiology and genetic mechanisms and in the diagnosis of chromosomal aberrations. DNA synthesized during the S-period of replication can be labeled with the isotope tritiated thymidine and a permanent record made in photographic emulsion. The synthesis of DNA in human chromosomes is asynchronous, that is, certain areas incorporate thymidine while others are inactive. While chromosomes composed entirely of heterochromatin seem to replicate late in the S-period, the behavior of segmental heterochromatin is unknown. The phenomena of early and late replication could provide clues to the cellular mechanisms of genetic control. Autoradiographic analysis

is able to distinguish between morphologically similar chromosomes. The late-replicating members of a group, 4 in Group 4-5, 13 in Group 13-15, 18 in Group 16-18, X in Group 6-X-12, and Y, have made it possible to identify that chromosome responsible for aneuploidies previously attributed to the group as a whole. If individual investigators described replication in terms of intervals of the S-period, not only would more accurate patterns emerge, but a reliable system of designation would also develop. (31 refs.) *E. L. Rowan.*

1300 NEWCOMBE, HOWARD B. Present state and long-term objectives of the British Columbia population study. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 291-313.

Accumulated administrative data on the birth, marriage, and death of a million and a half British Columbians over a 20-year period have been linked together (with some medical records) through modern computer technology to provide genetic and epidemiological records not otherwise obtainable. Pedigree information about individuals and families has been searched, matched, and weighed in terms of probability of accuracy. Registers of handicapped and/or deceased children have been correlated with factors such as birth order and parental age and the relationship of fertility to disease has also been elucidated. The addition of biologic and diagnostic information from existing hospital insurance records, school records, census data (occupation and race) from vital registration forms, and multiple overlapping agency records could be linked together to carry out major studies in human ecology and population genetics. (5 refs.) - *E. L. Rowan.*

1301 FRANCOIS, JULES. Heterozygotes for sex-linked traits and Mary Lyon's inactivation theory. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 411-436.

Mary Lyon proposed that only 1 of the 2 X-chromosomes is genetically active in the female, and that during the twelfth to sixteenth day of embryonic life there is a random inactivation of 1 X-chromosome which is then late-replicating, heteropyknotic at prophase, and forms the sex chromatin mass (Barr body) during interphase. The heterozygous female would then be mosaic for the sex-linked traits carried by the 1 parental chromosome which was randomly inactivated. The sex-linked genes with such partial expression or occasional manifestation in heterozygous females are ocular albinism, choroideremia, pigmentary retinopathy, keratosis follicularis spinulosa decalvans, external congenital ophthalmoplegia, megalocornea, congenital ectodermal anhydrotic dysplasia, color blindness, hypochromic anemia, hemophilia, Duchenne's muscular dystrophy, diabetes insipitus, Vitamin-D-resistant rickets, Fabry's dystrophic lipidosis, glucose-6-phosphate-dehydrogenase (G-6-P-D) deficiency, and agammaglobulinemia. Mosaicism is borne out in G-6-P-D where 2 types of red cells have been identified. Exceptions exist, however, where 1 phenotype is not evident in the heterozygous female. This has been explained in terms such an unequal formation, unequal life span, and partial inactivation. Although the inactivation theory explains a great deal of observable phenotypic data, the mechanism of this inactivation still awaits explanation. (165 refs.) *E. L. Rowan.*

1302 STERN, CURT. Genes and people. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 507-520.

The genetic constitution of man is important not only in the formation and development of physical and mental aspects of the individual, but also in the characterization of population groups. A gene surplus as in Down's syndrome, a gene deletion as in the *cri-du-chat* syndrome, or a gene substitution in inborn errors of metabolism such as phenylketonuria has a devastating effect on the mental development of the individual. Population differences are nothing more than accumulated individual differences and are never clearly genetic or non-genetic. Sociocultural factors are clearly as important as constitutional ones in schizophrenia, intelligence, and personality. Rather than concern itself with gene erosion and methods of improving endowment, society should concentrate first on the acceptance of the polymorphism of man himself. (No refs.) *E. L. Rowan.*

1303 MULLER, H. J. What genetic course will man steer? In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics.* Baltimore, Maryland, Johns Hopkins Press, 1967, p. 521-543.

Human evolution should no longer proceed along the line of haphazard proliferation of aberrant mutations, but with proper germinal choice, should advance the endowments of cooperativeness and general intelligence. The luck of man in evolving to his present state should now be supplemented by the selective mating of superior individuals. It is now practical to store the sperm of such men (for decades, if necessary) and through artificial insemination provide children capable of dealing with the technology of the future. Prime-movers, counselors, and donors in such a project must exercise the highest scientific integrity to assure that no limited vested interest usurp the future welfare of mankind. (No refs.) - *E. L. Rowan.*

Miscellany

1304 McCREA, MARY G., HESTON, JEAN F., WOOD, HARRISON F., & SULLIVAN, JEAN E. Milk precipitins: A serological survey of 932 individuals. *Journal of the American Medical Association,* 203(8):557-561, 1968.

Serum precipitins to bovine milk were determined in 250 mongoloid, 475 MR non-mongoloid, and 197 non-retarded, anemic or non-O blood group individuals. The double diffusion in agar with microdiffusion method was used to analyze the blood samples. A high incidence of milk precipitins was found in the mongoloid group, the PMR group (IQ less than 20), the anemic Ss, the non-O blood group Ss, and in Ss with a history of lower respiratory infection. Age, race, sex, allergy history, or food aspiration do not appear to be factors. Since mongolism and some other types of MR are caused by genetic disorders, the higher incidence of milk precipitins in the reacting groups may reflect increased immunological reactivity due to inherent constitutional factors. (8 refs.) *L. E. Clark.*

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1305 BARDEN, TOM P., & STANDER, RICHARD W. Effects of adrenergic blocking agents and catecholamines in human pregnancy. *American Journal of Obstetrics and Gynecology,* 102(2):226-235, 1968.

Reports of epinephrine-like substances in the blood of apprehensive patients in labor and descriptions of epinephrine levels in the blood of Ss during their first airplane flight have led to the study of the effects of β-adrenergic and α-adrenergic blocking agents on epinephrine and norepinephrine in pregnancy. Twenty-one pregnant volunteers were given epinephrine or norepinephrine and either propranolol (β-blocking agent) or phentolamine (α-blocking agent) and their uterine activity was recorded. Propranolol demonstrated an ability to reverse uterine and maternal heart rate effects of intravenous epinephrine and had a long persistence time. β-Blocking agents such as propranolol do not appear to affect the action of norepinephrine; however, α-blocking agents are antagonistic to norepinephrine. Human pregnant uterus is inhibited by epinephrine until the uterine β receptor sites are blocked; therefore, the use of β-blocking agents such

as propranolol may be beneficial in cases where circulating epinephrine blood levels are too high. (24 refs.) - *M. Drossman.*

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1306 CRAIG, JOHN M. The etiology of liver necrosis in rats following administration of progesterone late in pregnancy. *Laboratory Investigation,* 19(1):49-54, 1968.

Seventy-three pregnant rats were utilized to clarify the etiology of kidney and liver lesions and intrauterine death that result from the administration of progestrone late in pregnancy. Each rat was given 10 mg of progesterone (subcutaneously) on the fifteenth day of pregnancy and on each successive day. The experimental rats were sacrificed and examined on days 20 through 26. The 5 control rats were given no progesterone or were given only sesame oil carrier, and were sacrificed the twenty-first day of gestation. Two experimental rats died and several became moribund. Renal cortical necrosis, massive intrauterine hemorrhage, detached placenta, inflamed fetal membranes, heart lesions, and liver necrosis were found at autopsy. Deposits of fibrin were found in the intraglomerular capillaries and in the medulla of the kidney. *Escherichia coli,* enteric streptococci, paracolon bacilli, and proteus bacteria were recovered from uterine, spleen, or blood cultures, and the incidence of infection increased with the duration of gestation. The control rats had negative bacterial cultures and normal histology. Platelet and fibrinogen levels showed no significant change from normal in the experimental rats. The pathogenesis may be analogous to defibrination and maternal liver and kidney cortex necrosis which accompany "longstanding intrauterine death" in the human. (6 refs.) *M. T. Lender.*

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1307 DALTON, KATHARINA. Ante-natal progesterone and intelligence. *British Journal of Psychiatry,* 114(516):1377-1382, 1968.

A pilot study and follow-up study on the intelligence of children whose mothers had received ante-natal progesterone revealed that these children have an intellectual advantage over those whose mothers did not receive progesterone. The pilot study of 32 progesterone and 32 non-progesterone children who were rated by their teachers indicated that 55% and 41% respectively were above average in intelligence. A total of 262 children were used for the follow-up study which involved testing at the first birthday and at ages of 9 and 10. A group of 29 progesterone children was significantly ahead of 31 control children at 1 year in respect to standing, walking, teething, and talking; and they were rated higher in 6 of 7 academic and manual parameters at 9-10 years of age. Further comparisons show that "high dosage" children and those whose mothers received progesterone before the sixteenth week of gestation, were rated significantly higher than "low dosage" children, untreated controls, and those whose mothers were treated after the sixteenth week, respectively. This paper, while not comprehensive, should serve to stimulate further research. (8 refs.) - *M. T. Lender.*

Department of Psychological Medicine
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1308 HADDAD, R. K., RABE, AUSMA, LAQUEUR, GERT L., SPATZ, MARIA, & VALSAMIS, MARIUS P. Intellectual deficit associated with transplacentally induced microcephaly in the rat. *Science,* 163(3862):88-91, 1968.

Fischer rats injected with methylazoxymethanol late in pregnancy produce young with considerably reduced cerebral hemispheres. They appear normal otherwise. As adults these animals make many more errors in the Hebb-Williams maze than do control animals. (4 refs.) - *Journal abstract.*

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1309 MEEUWISSE, GUNNAR, GAMSTORP, INGRID, & TRYDING, NILS. Effect of phenytoin on the tryptophan load test. *Acta Paediatrica Scandinavica,* 57(2):115-120, 1968.

The tryptophan load test was given to 51 children (CA 3 mos-15 yrs), including 27 epileptic children, 10 children with various neurological disorders (some with MR), and 14 normal children. No difference was noted

among the groups in xanthurenic acid excretion after tryptophan loading; however, after treatment with phenytoin and tryptophan loading the excretion rate was significantly higher in the epileptic children. The xanthurenic acid excretion increased in normal children receiving 10 mg/kg/day for at least 5 days and it also increased in all children as a function of age. (17 refs.) - *M. Droseman.*

Department of Pediatrics
University of Lund
Lund, Sweden

1310 JACKSON, DOREEN, GRANT, DAVID B., & CLAYTON, BARBARA. A simple oral test of growth-hormone secretion in children. *Lancet,* 2(7564):373-375, 1968.

Serum growth hormone (HGH) response to "Bovril" was tested in 5 adult males, 6 adult females, and 37 boys and 26 girls (CA 3 mos to 19 yrs). Most of the children were below normal height and included those with short stature from maternal deprivation, low birthweight, and conditions such as Turner's syndrome and brain damage. Seven children with histories of hypoglycemia, and mild hydrocephalus were used as controls. Bovril was given orally (20 g/1.5 sq m body-surface area) and blood tests were performed at 30 minute intervals for 2 1/2 hours for HGH. All women, 1 man, normal controls, small normal children, low birth-weight children, and some children with short stature from other causes had responses to Bovril of 22.9 to 30.6 ng/ml. Children with craniopharyngioma, Turner's syndrome, hyposomatotrophic short stature, and brain damage (3 children) did not produce HGH in response to Bovril. Since other methods of estimating HGH in children are unpleasant at best and sometimes dangerous, it is recommended that the oral Bovril test be used instead. (15 refs.) - *M. Droseman.*

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1311 YAP, C. B. Spinal segmental and long-loop reflexes on spinal motoneurone excitability in spasticity and rigidity. *Brain,* 90(4):887-896, 1967.

When a paired shock stimulus was applied to the gastrocnemius muscle to study segmental excitability in normal Ss, Ss with pyramidal lesions, and Ss with extrapyramidal lesions, it was found that recovery for the 3 groups occurred maximally at approximately 200 msec. Passive stretching of the calf muscles produced absolute facilitation in both normal and pyramidal Ss but caused wide fluctuations in extrapyramidal Ss. The periods of complete inhibition varied in the 3 groups but only in the pyramidal group was it considered to be significantly different from normal. On the other hand the difference in recovery for the groups at 200, 250, and 300 msec was significant. Furthermore, 7 of the extrapyramidal Ss who underwent thalamotomy for Parkinsonism and were retested showed a disappearance of facilitation and a significant shift to the left of their recovery point with smaller standard deviations. From past studies it appears that long-loop reflexes from the spinal cord exert a strong excitation on spinal motor neurons and thalamotomy in patients with Parkinson's disease somehow alters this so that facilitation disappears. (23 refs.) - *E. Gaer.*

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1312 EMMANOUILIDES, GEORGE C., TOWNSEND, DUANE E., & BAUER, ROBERT A. Effects of single umbilical artery ligation in the lamb fetus. *Pediatrics,* 42(6):919-927, 1968.

An "experimental model" to study placental insufficiency was designed which used single umbilical artery ligation in the lamb fetus. Twenty pregnant ewes of 85 to 145 days gestation had an indwelling catheter placed into the fetal aorta. The catheter was placed through the umbilical artery and in a retrograde position, and the artery was ligated. Fetal heart rate, blood pressure, pH, PO_2, and PCO_2 determinations were made for the balance of gestation. Fetuses that were near term did not survive, but 9 younger fetuses survived 3 to 56 days. Acidosis, hypercapnia, and hypoxia occurred shortly after surgery, but the fetus returned to normal levels within several hours. One fetus survived 26 days and suffered severe malnutrition and with hypoxia, hypercapnia, and acidosis that increased from normal levels 2 days previous to death. Another fetus (a twin) survived 56 days with hypoxia, hypercapnia, and acidosis and weighed less than 1/2 its healthy twin. The results indicate that victims of the "single umbilical artery" syndrome have a better chance of surviving if the atrophy occurs earlier during gestation. It is also suggested that the condition is atrophy,

rather than aplasia of the single umbilical artery that causes this syndrome. This "experimental model" has potential value in further related studies. (9 refs.) - *M. T. Lender.*

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Torrence, California 90509

1313 SAXEN, LAURI, CANTELL, KARI, & HAKAMA, MATTI. Relation between smallpox vaccination and outcome of pregnancy. *Journal of Public Health,* 58(10):1910-1921, 1968.

Teratogenic effects of maternal smallpox vaccination during the early stages of gestation were unable to be detected in an epidemiological study performed in Finland in 1963. Following a mass vaccination, a questionnaire was forwarded to mothers of stillborn or malformed infants delivered during the following year, and pertinent data were collected from a control group of healthy, normal children from the same maternal welfare areas. No significant difference was noted in the vaccination rate of the 2 groups. There were no specific anomalies noted following the mass vaccination nor was there any increase of incidence of malformation. Early abortions cannot be reliably studied but it is likely that exposure to a teratogen during the early gestational months leads to abortion rather than to malformed infants. Much more research is indicated in this specific area but the process will be a slow and laborious one. The limitations and problem areas are stressed in the study. It proved to be a worthwhile approach to the detection of the teratogenic effects of vaccination. (24 refs.) - *S. Half.*

National Board of Health
Helsinki 25, Finland

1314 KURY, GEORGE, CHAUBE, SHAKUNTALA, & MURPHY, M. LOIS. Teratogenic effects of some purine analogues on fetal rats. *Archives of Pathology,* 86(4):395-402, 1968.

The purine analogues, mercaptopurine, mercaptopurine riboside, mercaptopurine-3-*N*-oxide, and 6-hydroxylaminopurine were found to be teratogenic for rats. Malformations in the fetuses included cleft palate, cleft lip (6-hydroxylaminopurine only), deformed appendages and tail, and abnormalities of the urogenital system, adrenals, diaphragm, and heart. 6-Methylmercaptopurine riboside, 6-hydroxylaminopurine riboside, xanthine-3-*N*-oxide, and guanine-3-*N*-oxide were also tested and were found not to cause congenital abnormalities in the dosage used. Seven cases have been reported in the literature in which pregnant women were given mercaptopurine during the first trimester for treatment of leukemia, and there were no developmental abnormalities; however, 1 baby was stillborn and 2 others died shortly after delivery. Purine analogues interrupt nucleic acid synthesis by inhibition of purine biosynthesis and although the mechanism of action of these analogues in embryos is not clear, it is suggested that nucleic acid inhibition in rapidly proliferating fetal tissues would be catastrophic and could easily cause the congenital abnormalities observed. (22 refs.) *M. Drosman.*

Cancer Research Institute
194 Pilgrim Road
Boston, Massachusetts 02215

1315 COHEN, MAIMON M., HIRSCHHORN, KURT, & FROSCH, WILLIAM A. In vivo and in vitro chromosomal damage induced by LSD-25. *New England Journal of Medicine,* 277(20):1043-1049, 1967.

Chromosomal aberrations (particularly dicentrics) and depression of leukocyte mitosis by LSD-25 (lysergic acid diethylamide) has been demonstrated both *in vitro* and *in vivo.* LSD-25 in various concentrations was added to peripheral leukocyte cultures of 6 normal Ss. After metaphase arrest and staining, slides were evaluated by phase-contrast microscopy and compared with controls. Leukocytes were similarly examined in 18 patients with history of LSD ingestion and compared to 12 controls. Results showed an elevated frequency of breaks in the LSD-exposed chromosomes of both groups. Four children of 3 mothers using LSD displayed abnormal chromosomes. Increased chromosomal damage was incidentally noted in patients exposed to phenothiazines. The greatest danger of such agents is potential sex chromosomal damage. Clinically normal carriers may transmit translocation abnormalities and prevent assessment of total LSD damage for generations. (36 refs.) *W. Asher.*

Division of Human Genetics
86 Hodge Avenue
Buffalo, New York 14222

1316 LSD and chromosomes. *British Medical Journal*, 4(5572):124-125, 1967.

Recent studies demonstrate the powerful cytogenetic effects of lysergic acid diethylamide (LSD). Dicentric and acentric fragments, chromatid exchanges, chromatid breaks, and Philadelphia-like chromosomes (seen in patients with chronic myeloid leukemia) are among the types of aberrations seen. Determination of the mutagenic potential of LSD and other new drugs is recommended. (5 refs.) *W. Asher.*

1317 COHEN, MAIMON M., & MUKHERJEE, ANIL B. Meiotic chromosome damage induced by LSD-25. *Nature*, 219(5158):1072-1074, 1968. (Letter)

Cytogenetic damage to both somatic and meiotic chromosomes of 10 mice given intraperitoneal injections of lysergic acid diethylamide (LSD-25) was 10 times greater than the normal chromosomal damage of 3 mice serving as controls. Chromatid and isochromatid breaks, fragments, metacentric and submetacentric chromosomes and possible nondysjunctions were observed in cells from bone marrow (most susceptible) and spermatogonal metaphase and diakinesis. Such rearrangement in gametes might yield "balanced translocation heterozygotes" which could in turn produce abnormal offspring. (9 refs.) - *E. L. Rowan.*

Division of Human Genetics
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Buffalo, New York 14214

1318 HECHT, FREDERICK, BEALS, RODNEY K., LEES, MARTIN H., JOLLY, HUGH, & ROBERTS, PATRICIA. Lysergic-acid-diethylamide and cannabis as possible teratogens in man. *Lancet*, 2(7577):1087, 1968. (Letter)

A patient is reported who was born with a malformation of the right arm and whose mother had taken LSD and had also smoked marijuana both before and during her pregnancy. Chromosome studies on the mother showed no abnormalities, and chromosome studies were not done on the S or his father. Although LSD at high doses has caused chromosomal breaks in some animals, no positive linkage has been demonstrated in humans. Cannabis resin from which marijuana is obtained has been determined to be a teratogen in several species of animals. It is suggested that children of parents who have taken LSD or cannabis be reported whether malformations exist or not. It is also suggested that it is too early to classify either LSD or marijuana as teratogens in humans. (10 refs.) *K. Drosman.*

University of Oregon Medical School
Portland, Oregon 97201

1319 PERSAUD, T. V. N., & ELLINGTON, A. C. Teratogenic activity of cannabis resin. *Lancet*, 2(7564):406-407, 1968. (Letter)

In a study of the teratogenic effects of cannabis resin on pregnant rats, it was determined that a high number of fetal abnormalities and deaths occurred. Thirteen pregnant rats were injected intraperitoneally with 4.2 mg of resin/kg daily on 1-6 days of gestation. On the twentieth day, the animals were sacrificed and fetal counts were performed. In the group treated with cannabis resin, 29% had fetal resorptions, 57% had fetal malformations, and only 14% had normal offspring. In a control group, the figures were respectively, 17%, 0%, and 83%. There appears to be no doubt that cannabis is a teratogen in rats; the possibility of its being a teratogen in humans should not be discounted. (2 refs.) *K. Drosman.*

Department of Anatomy
University of the West Indies
Mona, Kingston 7, Jamaica

Physical, Emotional, and Social

1320 CONGER, JOHN JANEWAY. Mental retardation as child development. *Mental Retardation (AAMD)*, 6(6):10-14, 1968.

Progress is being won against MR and related problems, and the present social climate is one which encourages further scientific, professional, and social advances. The change in thinking which has yielded the concept of maximal opportunity for the individual child, the understanding that uniform opportunity is not necessarily equal opportunity, amounts to a social revolution and, broadly applied, creates conditions favorable for an attack on the most critical social problems. Additional broadly based, interdisciplinary research on retardation is needed in all areas from basic biology to sociological aspects. The retarded child is first and foremost a child, with far more in common with other children than he has differences. Problems of the retarded child are problems of child development, broadly conceived. The retarded child should be viewed as a whole, and cooperative, not merely summative, therapies should be applied. The greater incidence of retardation in the deprived sector demands more vigorous prosecution of the attack on the culture of poverty, currently faltering for a variety of reasons. (1 ref.) - *Journal abstract.*

University of Colorado
Denver, Colorado 80220

1321 BROWN, JOE. Ratio of physical development as a factor in performance of retarded boys on physical fitness. *Training School Bulletin*, 65(1):7-11, 1968.

Thirty TMR boys (CA, 10 to 17 yrs; MA, 2 to 7 yrs) revealed that their level of physical development (based on the Wetzel Grid) did not significantly affect their physical fitness performance. The performance items included standing broad jump, sit-ups, static body balance, hanging from a bar, 25-yard dash, back-lifts, back flexibility, 1/2 burpee, and leg-lifts. Three items were administered each day with practice allowed. Since the 15 boys who achieved a physical developmental ratio in excess of 100 were significantly different ($p=<.05$) from those who had a ratio of <100, the means of the 2 groups on each of the physical fitness items were compared. No significant differences were found. (7 refs.) - *A. Huffer.*

Department of Health, Physical
Education, and Recreation
University of Cincinnati
Cincinnati, Ohio 45221

1322 CRATTY, BRYANT J. The role of motor activities in programs for retarded and educationally handicapped children. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 75-79.

An assessment of the perceptual-motor attributes of 177 TMR, EMR, and educationally handicapped (EH) Ss, CAs 5 to 24 years (mean age 11.40 yrs) revealed that: the mean scores of EMR Ss and EH Ss were significantly superior to those of TMR Ss; Ss evidencing Down's syndrome had the most inferior test scores; body perception scores were most predictive of total battery scores of TMR Ss; balance scores were most predictive of the total performance of EMR Ss; EH Ss had the poorest crawling and walking patterns; and all Ss had difficulty in making left-right discriminations about their body parts. The test battery was designed to evaluate body perception, gross agility, locomotor behavior, locomotor agility, balance, throwing, and tracking. There were moderate correlations between the total battery and age (.54) and IQ (.63). The test performances of EMR Ss and EH Ss were best during late childhood and early adolescence. Mongoloid Ss improved with age in the areas of body perception, agility, and tracking, but they showed no improvement with age in tests of balance, locomotor agility, and throwing. Perceptual-motor training programs for mongoloid children should emphasize simple tasks which foster the development of general agility, balance, body perception, and the ability to maintain visual control while moving. Programs for non-mongoloid TMRs should provide practice in body part perception and balance and training in socially approved playground activities, such as body-to-object perception, agility, ball skills, and hopscotch. The most important activities in the total neuromotor development of EMRs seem to be dynamic and static

posturing balance tasks. Training for EHs should include perception, balance, motor agility tasks, and activities which will develop skills given status by their peers. (No refs.) - *J. K. Wyatt.*

1323 LEHMAN, RALPH A. W. Motor co-ordination and hand preference after lesions of the visual pathway and corpus callosum. *Brain,* 91(3):525-538, 1968.

Experiments were performed on 24 monkeys to study the changes in the dexterity and frequency of hand usage in response to simple visual inputs that were presented to 1 cerebral hemisphere before and after portions of the corpus callosum were sectioned. The animals were subjected to unilateral optic tract section or unilateral occipital lobectomy on the side opposite to the previously determined hand of preference. Lastly, the corpus callosum of 3 animals was sectioned. Hand preference was measured initially, after the optic tract sections or lobectomies and after the callosal sections. Optic tract section caused no great change in hand preference, but if visual guidance was needed, there was a switch to the hand controlled by the hemisphere with the unaffected optic tract. Progressive sectioning of the corpus callosum caused the complete absence of responses with the hand controlled by the hemisphere with the severed optic tract. It is indicated that interhemispheric transfer of visual information occurs and that motor activity in a hand can be controlled by the contralateral hemisphere, but intrahemisphere visual-motor coordination is preferred and has an advantage, probably because of the shorter synaptic pathway and larger amounts of visual information transferred by the pathways. (20 refs.) - *M. T. Lender.*

Division of Surgery
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1324 VANDENBERG, STEVEN G., ed. *Progress in Human Behavior Genetics: Recent Reports on Genetic Syndromes, Twin Studies, and Statistical Advances.* Baltimore, Maryland, Johns Hopkins Press, 1968, 356 p. $12.50.

For many years the argument between biologists and psychologists over "nature" versus "nurture" has obscured the essential fact that certain types of behavior would have as much "phylogenetic adaptive" value as some physical characteristics; this book presents a series of special articles on the genetics of behavior. The first section deals with behavioral aspects of established genetic syndromes (Down's, Turner's, Klinefelter's, and others) and disorders which have not been definitely proven to be genetic in origin (schizophrenia); the second section details several twin studies in relation to behavior; and the third section covers new statistical advances in the study of behavior. The subject matter should be extremely interesting to biologists, geneticists, psychologists, and psychiatrists. (386 refs.) - *K. Drossman.*

CONTENTS: An Evolutionary Framework for Behavioral Research (Freedman); Studies of Behavior in Genetically Defined Syndromes in Man (Anderson & Siegel); Psychological Test Patterns in Down's Syndrome (Dingman); Cognitive Deficits in Turner's Syndrome (Money); Physiological and Pathological Correlates of Differences in Taste Acuity (Kaplan); In Pursuit of the Schizophrenic Genotype (Gottesman & Shields); The Sibships of Schizophrenics (Erlenmeyer-Kimling); Clinical Variability in Schizophrenic Twin Partners (Kringlen); The NIMH Study of a Series of Monozygotic Twins Discordant for Schizophrenia (Pollin, Stabenau, Hoffer, Mosher, & Spillman); The Louisville Twin Study (Vandenberg, Stafford, & Brown); Environmental Bias in Twin Studies (Scarr); Further Evidence of the Relation between Age of Separation and Similarity in IQ among Pairs of Separated Identical Twins (Vandenberg & Johnson); Hereditary Components in the Performance of Twins on the WAIS (Block); Components of Heritable Variation in Mental Test Scores (Bock & Vandenberg); Genetic and Environmental Components in the Covariation of Cognitive Abilities: An Additive Model (Loehlin & Vandenberg); Autonomic Research with Twins: Methods of Analysis (Wilson); Analyzing Dyadic Relationships (Roudabush); and Factor Analysis and the Use of Inbred Strains (Meredith).

1325 ANDERSON, V. ELVING, & SIEGEL, FELICIA. Studies of behavior in genetically defined syndromes in man. In: Vandenberg, Steven G., ed. *Progress in Human Behavior Genetics: Recent Reports on Genetic Syndromes, Twin Studies, and Statistical Advances.* Baltimore, Maryland, Johns Hopkins Press, 1968, Chapter 2, p. 7-17.

The emphasis on MR in genetic syndromes with MR has tended to obscure other aspects found in these disorders including distractibility,

lack of concentration, aggressiveness, and other "non-adaptive" behavioral characteristics. At the present, there are at least 50 different syndromes associated with MR, yet few of these disorders have had the behavioral aspects elucidated. In order to study behavior in these syndromes, the IQ must be high enough to test; the child must survive through childhood; and the frequency of the syndrome must be high enough in the general population to allow statistical analysis. In galactosemia, an enzyme deficiency disorder, there is marked distractibility and lack of concentration. Some children with this disease have visual-perceptual difficulties, behavior is anxious and fearful, and signs of emotional disturbances are present. Ss with Hartnup's disease may present psychosis, depression, or anxiety states; often these patients were treated initially as psychological problems. It has been noted that many Ss with Hartnup's disease have their symptoms moderated or exacerbated by dietary changes. Histidinemia, phenylketonuria, and Klinefelter's syndrome all show characteristic behavior patterns. Measurement of behavioral factors and investigation into the genetic basis of behavior are in order. (31 refs.) - *K. Drossman.*

1326 MOORE, BYRON C., THULINE, HORACE C., & CAPES, LaVERNE. Mongoloid and non-mongoloid retardates: A behavioral comparison. *American Journal of Mental Deficiency*, 73(3): 433-436, 1968.

Five hundred and thirty-six individuals with mongolism (Down's syndrome) residing in institutions of Arizona and Washington were matched with 536 control residents without mongolism and compared in terms of maladaptive behavior. Significant differences were noted on 14 of 21 variables tested with less maladaptive behavior in the group with mongolism. The findings from Arizona and Washington are in agreement. (8 refs.) - *Journal abstract.*

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1327 BAUMEISTER, ALFRED A. Behavioral inadequacy and variability of performance. *American Journal of Mental Deficiency*, 73(3): 477-483, 1968.

Most theoretical and empirical analyses of retarded behavior are based on a level-of-performance concept. This approach tends to focus on the invariants of behavior while ignoring critical aspects of variability. The hypothesis is advanced that retardates demonstrate greater intra-individual variability than normals. This behavioral process is discussed in relation to other sources of variance, reliability, and response perseveration. A review of the literature leads to the following conclusions: intelligence groups differ with respect to intrasubject variability; in some situations, this variability contributes more to the performance of retardates than of normals; and variability of performance can be affected by certain experimental manipulations. (15 refs.) - *Journal abstract.*

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1328 CAMPBELL, C. M. Stereotyped and expressive movements in imbeciles. *American Journal of Mental Deficiency*, 73(2):187-194, 1968.

Subnormal children and adults in an institution were observed for stereotyped and expressive behavior by means of a time-sampling technique. Severely disturbed children, when compared with non-disturbed children from the same wards, showed more behavior not directly related to the needs of the environment. They made less contact with each other, manipulating objects in isolation and showing little verbal communication. The non-disturbed group utilized objects and spontaneous vocalization in play and communication. Adult schizophrenic males showed a similarity in their behavior to the disturbed children. (11 refs.) - *Journal abstract.*

15 Grove Road
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1329 Life was captivity for India's wolf boy. *Medical World News*, 9(24):52, 1968.

An animalistic Indian boy, whose appearance and actions indicated that he had lived in an animal environment from the age of 1-11 years, died after 14 years of confinement at Balrampur Hospital (India). The boy was MR and aphasic; "false ankylosis prevented him from straightening his limbs." He was epileptic, but no brain lesion was found. He showed no human emotions, had a unique sense of smell,

howled and grunted but did not speak, and appeared to find the human environment hostile. Additional problems included recurrent fever, constipation, and respiratory infections. It was concluded that he was not neurologically or psychologically crippled, but a "child of the jungle," whose length of survival in the hospital was comparable to that of a wolf's in captivity. (No refs.) - *J. P. West.*

1330 LELAND, HENRY, NIHIRA, KAZUO, FOSTER, RAY, SHELLHAAS, MAX, & KAGIN, EDWIN. *Conference on Measurement of Adaptive Behavior: III.* Parsons, Kansas, Parsons State Hospital and Training Center, 1968, 160 p. (Price unknown)

This final conference of the Adaptive Behavior Project during the current grant period resulted in major changes in the Adaptive Behavior Check List, and in the conclusion that the services of the project should be extended beyond residential settings to include community facilities. The 2 forms of the checklist booklet now make allowances for age differences. Forms have been modified and items have been reworded so that there is a separate unified checklist designed for the specialized needs of children and another for adults. Current plans of the project are to complete data collection of the checklist by distributing it to a large number of residential settings, and to seek another grant in order to meet community needs for a checklist which can be used with the MR. (13 refs.) - *J. K. Wyatt.*

CONTENTS: The Interest of AAMD in Adaptive Behavior (Noone); Introduction and Theoretical Considerations (Leland); Development, Organization and Uses of the Adaptive Behavior Check List (Nihira); Discussion; Resource Materials; and Adaptive Behavior Check Lists.

1331 LELAND, HENRY. Introduction and theoretical considerations. In: Leland, Henry, Nihira, Kazuo, Foster, Ray, Shellhaas, Max, & Kagin, Edwin. *Conference on Measurement of Adaptive Behavior: III.* Parsons, Kansas, Parsons State Hospital and Training Center, 1968, p. 13-17.

The current considerations of the Adaptive Behavior Project are concerned with the use of an Adaptive Behavior Measurement Scale as a measuring instrument, and with the development of a description and classification system for MRs which can be used to develop long range program objectives. In order to increase the utility of measurement-scale data for the development of treatment and training programs, diagnostic profiles and information weighting procedures which emphasize meaningful aspects of the information need to be established. A "level" description or classification system based on a combination of clinical judgements and scale data recognizes the reversibility of adaptive behavior and facilitates the development of general, long-range programs which can be adjusted to meet individual needs to rehabilitation in deficient areas. Experience indicated that a system with 7 functioning levels which range from "no impairment" through totally dependent is most valuable. Adaptive behavior is operationally defined as the effectiveness with which an individual copes with the environment. Its measurement is concerned with the evaluation of the areas of independent functioning, personal responsibility,and social responsibility, and with the interactions between these areas and a community's critical demands and age-specific expectations. (2 refs.) - *J. K. Wyatt.*

1332 NIHIRA, KAZUO. Development, organization and uses of the Adaptive Behavior Check List. In: Leland, Henry, Nihira, Kazuo, Foster, Ray, Shellhase, Max, & Kagin, Edwin. *Conference on Measurement of Adaptive Behavior: III.* Parsons, Kansas, Parsons State Hospital and Training Center, 1968, p. 19-27.

The Adaptive Behavior Check List--Form 3 provides a fairly adequate description of the behavior characteristics of individuals and provides for classification on 5 adaptive behavior levels. Its development was based on an item analysis of the preliminary Adaptive Behavior Check List and on a survey of environmental demands. An examination by a professional team of the utility of the checklist as an evaluation and diagnostic instrument in an institutional setting revealed that it was useful as a means of: acquainting professionals with a patient whom they had not had many occasions to observe; providing an overall picture of a patient; and pointing out discrepancies between professional evaluation and checklist information. The specialized evaluations of adjunctive therapists require more specific information than is provided by the checklist; however, checklist information may be useful to them as a means of evaluating patient behavior outside the therapy room. Professionals recognized that the checklist may prove useful in admission screening, status check-up, program evaluation, program development, communication with parents, discharge decisions, and vocational counseling. (6 refs.) - *J. K. Wyatt.*

1333 ISAACSON, ROBERT L., ed. *The Neuropsychology of Development: A Symposium.* New York, New York, John Wiley and Sons, 1968, 177 p. $8.95.

Discussions of experimental investigations of the relationship between developing physiological and behavioral processes include data on: the effects of steroid hormones administered at different periods in an organism's life; the behavioral and anatomical effects of lesions of the hippocampus made at different developmental stages; the age specific effects upon deficits produced by frontal lobe lesions; the effects of the destruction of neo-cortical systems during infancy; and the behavioral effects of physiological variables. There is an increasing amount of evidence that steroid hormones have a different effect on the nervous system at different stages of development. Apparently, there is a relationship between the introduction of androgen into the nervous system during a critical period and permanent alteration of the nervous system. Lesions of the hippocampus made shortly after birth produce deficits which are entirely "task specific" and behavioral changes which may be in the opposite direction to those of adult lesions. The effects of frontal lobe lesions induced in animals within the first 2 months of life indicate an impairment in learning-set performance. There may be a relationship between the degree and persistence of behavioral sparing, following neonatal brain injury, and the factors of task complexity and sensory cue dominance. A survey of the effects of childhood neurological diseases illustrates that during childhood there is a relationship between constantly changing behavioral capacities and a genetically encoded program which determines the stimuli to which the growing organism will be susceptible at different times. The previously unpublished data and interpretations in these original works, which were specially prepared for a symposium held at the University of Michigan, should be of interest to psychologists, psychiatrists, neuroscientists, and those dealing with MR. (181 refs.) - *J. K. Wyatt.*

CONTENTS: Steroid Hormones and the Neuropsychology of Development (Valenstein); Behavioral and Anatomical Sequelae of the Infant Limbic System (Isaacson, Nonneman, & Schmaltz); Effects of Induction Age and Size of Frontal Lobe Lesions on Learning in Rhesus Monkeys (Harlow, Blomquist, Thompson, Schultz, & Harlow); Sparing of Function Following Localized Brain Lesions in Neonatal Monkeys (Kling & Tucker); and The Effect of Age on the Outcome of Central Nervous System Disease in Children (Lenneberg).

1334 LENNEBERG, ERIC H. The effect of age on the outcome of central nervous system disease in children. In: Isaacson, Robert L., ed. *The Neuropsychology of Development,* New York, New York, John Wiley and Sons, 1968, 147-170.

The relationship of CA in central nervous system disease is analyzed in terms of the importance of critical periods in development. Hypothyroidism is an example of the influence of CA in terms of time of onset. When this condition occurs at an early age, growth and behavioral and psychological development are limited. Hypofunction in childhood results in "irreversible developmental arrest" due to lack of the hormone. In the case of congenital thyroidism, therapy should be initiated within a few weeks of birth. Cases of hypothyroidism which occur after critical periods of development are much more amenable to treatment. Critical periods for defects resulting from German measles, retrolental fibroplasia, kernicterus, hyperbilirubinemia, and PKU are described with resultant effects. It is hypothesized that lesions in the mature brain are confined to certain structures, while those developing during prenatal or early postnatal development may be more generalized and involve a more general pathology since tissues are involved in growth. Premature infants with brain injuries have even more difficulties. Sensory, motor, intelligence, and language functions are discussed according to onset of injury in relation to CA. A child with perinatal brain injury may "grow into his symptoms" with the effects on distant structures occurring years after the injury. Behavior should be studied as a biological phenomenon and critical periods of development should be accepted as a legitimate concept. (20 refs.) - *B. Bradley.*

1335 TIZARD, BARBARA. A controlled study of all-night sleep in overactive imbecile children. *American Journal of Mental Deficiency,* 73(2):209-213, 1968.

All night electroencephalograms (EEGs), electrooculograms (EOGs), and movements were recorded from groups of overactive imbecile children, CA 8-10 years, and control groups of normal and imbecile children of the same age on 2 consecutive nights. Apart from clinical EEG abnormalities, few group differences were found. The overactive group tended to have more but briefer periods of deep sleep, while the normal children tended to have longer waking periods. Over 1/2 the imbeciles and 1/4 of the normal children had periods resembling Stage I-Rapid Eye Movement

(I-REM) sleep without REMs. All 3 groups spent longer in deep sleep, and less time in I-REM sleep than adults. (9 refs.) *Journal abstract.*

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1336 CARROLL, MARILYN NELSEN. "Junk" collections among mentally retarded patients. *American Journal of Mental Deficiency,* 73(2):308-314, 1968.

Seventy-one MR female patients were observed in relationships to their "junk" collections. Although over 1/2 of the group owned 1 such item, the group as a whole did not own as many as 1 would expect in view of common stereotypes of the MR. The probability of a patient owning at least 1 "junk" item was inversely related to intelligence. Those in the middle IQ group owned the most such items, indicating that marginality of status within the group is also related to the possessions that a patient owns. (8 refs.) - *Journal abstract.*

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Pomona, California 91766

1337 NELSON, JOHN C. Interests of disadvantaged and advantaged Negro and white first graders. *IMRID Papers and Reports,* 4(8):1-4, 1967.

The occupational preferences of 6-year-olds were quite similar regardless of racial and socioeconomic differences. Interests varied as a function of the sex of the S. The occupational preference and wishes of 886 underprivileged Negroes were compared with responses of 47 disadvantaged whites, 62 advantaged whites, and 32 advantaged Negroes. Professional occupations were chosen by 63.5% of the advantaged Negroes but only 35.7% of the disadvantaged Negroes, suggesting a slight trend toward upward mobility. (3 refs.) - *A. W. Jordan.*

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1338 DITTMANN, LAURA L., ed. *Early Child Care: The New Perspectives.* New York, New York, Atherton Press, 1968, 385 p. $8.95.

New information on infant development supports the conviction that early experiences, especially during the first 3 years of life, have an effect on later development, and that, therefore, the deviations in personality and mental development which are particularly evident in disadvantaged children are rooted in their earliest experiences. Although preschool enrichment and stimulation programs have been successful, their focus is usually remedial rather than preventive. A preventive program which would provide ideal care for all young children should include real knowledge of each child, a screening examination aimed at identifying developmental vulnerability, an evaluation and cataloging of the environment, the development of a "prescription" program which considers constitutional hazards and specifies the type of environment required for optimal development, and community assistance in the provision of environmental alteration when it is needed. Basic steps required for the implementation of this program would be the institution of a continuing census; the development of training programs for professional workers and subprofessional assistants in a variety of appraisal, training, and child-rearing areas; and the development of a network of community centers which would present a coordinated health, education, and welfare program. Longitudinal research projects at the Children's Hospital, Washington, D. C., The Frank Porter Graham Child Development Center, Chapel Hill, North Carolina, The Yale Child Study, New Haven, Connecticut, and The Children's Center, Syracuse, New York will employ observation and demonstration procedures in order to carefully assess and identify factors relevant to the prevention of culturally determined MR. Psychologists, psychiatrists, social workers, pediatricians, and educators will find this survey of present-day child-rearing methods and problems of interest. (300 refs.) - *J. K. Wyatt.*

CONTENTS: Conceptualizing the Early Environment (Yarrow); The First Year of Life: The Infant (Provence); Development During the Second Year: The One-Year-Old (Pavenstedt); The Third Year of Life: The Two-Year-Old (Neubauer); Individualization of Child Care and Its Relation to Environment (Murphy); Assessment of Infants and Young Children (Murphy); The Role of Stimulation in Models for Child Development (Gewirtz); On Designing the Functional Environment of the Child to Facilitate Behavioral Development (Gewirtz); Poor Families and Their Patterns of Child Care: Some Implications for Service Programs (Chilman); Group Care of Infants in

Other Countries (Meers & Marans); The Children's Hospital in Washington, D. C. (Marans, Meers, & Huntington); The Frank Porter Graham Child Development Center (Robinson); The Yale Child Study Center Project (Provence); and The Children's Center in Syracuse, New York (Caldwell & Richmond).

1339 YARROW, LEON J. Conceptualizing the early environment. In: Dittmann, Laura L., ed. *Early Child Care: The New Perspectives.* New York, New York, Atherton Press, 1968, Chapter 1, p. 15-26.

Behavior patterns and characteristics which day-care programs should strive to develop in young children include: language problem solving and cognitive skills; capacities for appropriate and enduring interpersonal relationships; an appropriate reality orientation as well as an appropriate and constructive use of fantasy; initiative and spontaneity; controls for the handling of drives; and gratification in goal-directed activities. Analyses of environmental influences should be based on an interaction orientation and should consider both inanimate and human environmental stimuli, and the conditions under which they are provided. Optimal periods of separation from the mother need to be established for children of all ages. Organismic variables which affect the impact of the environment on the organism are receptivity to stimuli based on developmental level, biological factors, unique past history, and immediate past experiences, and developmentally determined response capabilities. Research which allows for the more precise definition of optimal levels and qualities of stimulation at each developmental point will enable the design of day-care environments which will enhance development. (No refs.) *J. K. Wyatt.*

1340 MARANS, ALLEN E., MEERS, DALE R., & HUNTINGTON, DOROTHY S. The Children's Hospital in Washington, D. C. In: Dittmann, Laura L., ed. *Early Child Care: The New Perspectives.* New York, New York, Atherton Press, 1968, Chapter 11, p. 287-301.

The major goal of the child-rearing research project at the Children's Hospital, Washington, D. C., is the discovery of methods for the prevention of culturally determined retardation and of cognitive, motivational, personality, and social dysfunction. The theoretical assumptions of the project are: ego "structure" is derived from a heredity-environment interaction; ego "structure" begins to crystallize in earliest infancy and may be irreversible in the presence of developmentally inappropriate organic or environmental pressures; the development of infant perceptual, integration and memory capacities requires relative freedom from crippling stress; the development of anxiety and frustration tolerance in infancy requires some minimum of maternal support; learning is motivated by desires to explore the environment and by attempts to master fears and anxiety; intellectual capacity may be impaired either in its particular functions or in its entirety; parental modes and ideals are understood and internalized during preverbal development; and when goals appear unreachable because of limited opportunities or emotional conflict, limited motivations may be "realistic." Ss for the project will be full-term infants who evidence normal conditions at birth, normal pediatric and neurological examination results, and normal neonatal development. They will be as representative as possible of 1 of the most culturally destitute populations of the community. They will be raised from birth to age 3 in either an infant day-care center or in a residential center, both of which will be designed to provide care which will supplement the psychological nutriments of infant life. The maturation pattern of the infants, the contributions of parents and the home environment, and the nurturing and staff-care methods of the project facilities will be evaluated. (11 refs.) - *J. K. Wyatt.*

1341 ROBINSON, HALBERT B. The Frank Porter Graham Child Development Center. In: Dittman, Laura L. *Early Child Care: The New Perepectives.* New York, New York, Atherton Press, 1968, Chapter 12, p. 302-312.

The purpose of the project at the Frank Porter Graham Child Development Center, Chapel Hill, North Carolina will be to actively intervene in the lives of culturally deprived children by: providing opportunities for optimum development during the crucial formative years; and by developing an understanding of those behavior patterns which pertain to educational achievement and to mental and physical health. The Center will be composed of a day-care facility for infants and children of working mothers, and a school for primary and elementary level children. Children will represent all segments of the community and will be enrolled in the Center before birth. Emphasis will probably be on children of low socioeconomic families. The

physical environment and program of the Center will be designed to provide stimulation in the form of novelty, varied experience, perceptual input, enrichment, increasingly complex verbal and nonverbal experiences, and exploration opportunities. Staff members will attempt to emulate the practices of parents with children found to be high in achievement motivation, and will provide high expectations for the children, help them to achieve their goals, and provide genuine approval when mastery is attained. Preemployment selection and in-service training practices will be used to obtain a staff with healthy child-rearing practices who will provide a balance of permissive activity within firmly defined limits, and a general democratic environment. Extensive work will be done with the families of the children enrolled in the project. Comprehensive health care will be provided for the children. Both longitudinal and short-term research studies will be carried out in a wide variety of developmental areas. (No refs.) - *J. K. Wyatt.*

1342 PROVENCE, SALLY. The Yale Child Study Center Project. In: Dittmann, Laura L., ed. *Early Child Care: The New Perspectives.* New York, New York, Atherton Press, 1968, Chapter 13, p. 313-325.

The proposed multidisciplinary research project at the Yale Child Study Center, New Haven, Connecticut, involves the longitudinal study of 75 homeless or otherwise disadvantaged children from infancy to age 7. The children will be studied either in their own family groups, in foster family groups, or in a congregate living situation. The project program will involve active support and intervention in each group. Important issues which will be investigated will include maternal attachment, identification, ego development, and body image; the interaction of these factors with one another at each stage of development; and the ways in which their development is affected by interactions with parents and other crucial figures in the child's environment. Professional personnel such as social workers, pediatricians, child development specialists, teachers, and child-care staff will act as participant observers, collect data, and perform service-centered functions by providing the child or family with support, child-care advice, health care, and education. Non-participant observers will gather data on behavior in school settings and in child-child, child-staff, parent child, and parent-staff interactions. The project plans to make research reports on the effects of child welfare practices, specific styles of child care on child development, intervention efforts, and the training program for child welfare workers. (7 refs.) *J. K. Wyatt.*

1343 CALDWELL, BETTYE M., & RICHMOND, JULIUS B. The Children's Center in Syracuse, New York. In: Dittman, Laura L., ed. *Early Child Care: The New Perspectives.* New York, New York, Atherton Press, 1968, Chapter 14, p. 326-358.

Although a number of changes have been made in the program of the Children's Center, Syracuse, New York, in its 2 years of existence, the focus of the Center continues to be on the development of a research and demonstration day-care center for very young children. Program development is based on the hypothesis that the first 3 years of life represent a critical period for the priming of cognitive development and that experiences during this period have a permanent effect on the developing child. The program is designed to forestall school-age verbal and emotional deficit in underprivileged children by providing them with environmental supplements as early as 6 months of age. General guidelines used to translate theory into action have been developed from assumptions that the development of a young child is enhanced by: a relatively high frequency of contact with a relatively small number of adults; the deliberate provision of a stimulating and responsive learning environment; an optimal need gratification level; a positive, trust inspiring emotional climate; an environment that places a minimum number of unnecessary restrictions on early exploratory attempts and a supply of natural limits that provide feedback data which is helpful in refining movements and actions; the provision of rich, varied, interpretable, cultural experiences; a physical climate that contains modulated amounts and varieties of sensory experiences and separates figure from ground; access to specific types of play materials; and the introduction of new experiences that are appropriately matched with the child's current organization level. The results of early studies on the intellectual progress of small groups of children participating in this enrichment program reveal a significant gain after a 3-month period, and a gain for a participation group and a drop for a nonparticipating control group after a period of 1 year. (15 refs.) - *J. K. Wyatt.*

1344 WEAVER, S. JOSEPH. Effects of motivation-hygiene orientations and interpersonal reaction tendencies in intellectually subnormal children. *Dissertation Abstracts*, 27(11,B):4153, 1967.

Fifty-two MR Ss (IQs <81), selected from a culturally disadvantaged school district were administered 3 experimental tasks to determine the effects of personality orientations and reinforcement on their interpersonal reaction tendencies. The tasks, performed on a flannel panel included: a random placing task with either support or punishment delivered on alternate trials; an unstructured free-play situation with no reinforcement; and placement of 3 family figures with mild support given to all. Distance from the experimenter to the S was the primary criterion. On the placement task, the support group moved toward the experimenter while the punishment group moved away. All Ss moved toward the experimenter during the unstructured task. On the family figure task, the punishment group moved away from the experimenter, even though they began the task significantly closer than the support group. The 2 personality groups failed to show differential movement toward or away from the experimenter. (No refs.) - *A. Huffer.*

No address

1345 JONES, GENTRY THOMAS. An experimental investigation of family relationships among mental retardates. *Dissertation Abstracts*, 27(11,B):4125, 1967.

The relationship between intellectual functioning and family relationships was examined in 10 adolescent MRs with large differences between their verbal and performance scores on the Wechsler Intelligence Scale for Children and 10 similar Ss with small difference scores on this scale. Analysis of responses to Nye's Questionnaire of Family Relationships revealed that the group with large difference scores displayed rejecting attitudes and behavior toward their parents. (No refs.) *A. Huffer.*

1346 SILVERSTEIN, A. B., & OWENS, EARL P. Factor structure of the social deprivation scale for mongoloid retardates. *American Journal of Mental Deficiency*, 73(2):315-317, 1968.

An attempt was made to cross-validate the findings of earlier studies of the social deprivation scale developed by Zigler, Butterfield, and Goff. The factor structure of the scale for mongoloid retardates was found to be generally similar to that previously reported for familial retardates. (1 ref.) *Journal abstract.*

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1347 RICKER, LAWRENCE H., PINKARD, CALVIN M. JR., GILMORE, ALDEN S., & WILLIAMS, CHARLES F. *A Comparison of Three Approaches to Group Counseling Involving Motion Pictures with Mentally Retarded Young Adults.* Tampa, Florida, MacDonald Training Center Foundation, 1967, 251 p. (Price unknown)

The use of audio-visual feedback of social behavior as a regular part of group counseling did not produce significantly more improvement in the social, emotional, and cognitive functioning of EMR young adults than did group counseling procedures which employed audio-visual aid which was not in the form of feedback, or group counseling procedures which did not provide a film viewing experience. A semi-directive, semi-structured, largely nonverbal, and noninterpretive group counseling approach was used with all Ss (mean CA, 18 yrs; mean IQ, 75) enrolled in sheltered workshops. Between group comparisons were made on 112 individual dependent variable scores. These were based on pre- and post-test administrations of the Kent Emergency Scale, Form D; the Wechsler Adult Intelligence Scale; the Draw-A-Person test; the Holtzman Inkblot Technique; Rating Scales of Social Behavior; the Vineland Social Maturity Scale; the Children's Embedded Figures Test; the Draw Yourself Test; the Sociometry Test; the Disc Assembly Test; the Level of Aspiration Test; the Rod and Frame Test; the Sixteen Personality Factor Test; a stress test; ratings by parents and workshop staff members; film ratings of social behavior; and follow-up studies. No significant differences between groups were found on the pre- and post-test ratings by parents and workshop staff members, film ratings of social behavior, or follow-up studies. Analysis of the test battery data indicated that when the tests were taken as a whole, the experimental group improved on 54% of the tests, the group which received no audio-visual experience improved 31%, and the group which received audio-visual information which was not feedback improved 15%. Although the test data indicate a trend toward superiority for the experimental group the gains were not great enough to justify the added expense of the audio visual feedback procedures. (166-item bibliog.) *J. K. Wyatt.*

1348 LAMBETH, HOSEA DeWOOD, JR. The self concept of mentally retarded children in relation to educational placement and developmental variables. *Dissertation Abstracts*, 67(11,A):3726, 1967.

On the basis of responses to the California Test of Personality, 21 institutionalized EMRs and 41 EMRs from public school special classes did not display differences in self concept with respect to CA, IQ, educational placement, and other developmental data; however, differences in self concept were apparent when the Ss were grouped in respect to speech defects. Criteria for S selection were white, male, IQ 50-75, CA from 13 1/2 to 14 1/2 years, and evidence of cultural-familial retardation. The 21 institutionalized Ss comprised the entire institutionalized population of North Carolina with respect to selection criteria. Developmental data included birth order, IQ, CA, height, weight, attendance and time in educational placement, speech defect, number of siblings, handedness, family stability, future goal, and concern about educational placement. In general, the Ss reflected poor adjustment. Speech defects and IQ correlated with self-concept scores. (No refs.) - *A. Huffer.*

1349 DAVID, WILLIAM J. GSR study of frustration in retarded and average boys. *American Journal of Mental Deficiency*, 73(3): 379-383, 1968.

The major purpose of this study was to assess the difference in GSR (galvanic skin responses) activation as a result of frustration between EMR and intellectually average Ss. The GSR activation to 4 conditions (cue, success, reward, and failure) also was investigated. Twenty male EMRs were compared with 20 average boys, and their GSR responses to the 4 conditions were measured. The results indicated there were no significant between-group differences in GSR responses to 4 different conditions; however, within-group significant differences were found. Greater responses appeared in the MR sample than in the average sample. (9 refs.) *Journal abstract.*

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1350 DE RUECK, A. V. S., & PORTER, RUTH, eds. *The Mentally Abnormal Offender.* Boston, Massachusetts, Little, Brown, and Company, 1968, 260 p. (Price unknown)

The management of the mentally abnormal offender is handled differently by different countries and by different disciplines. In order to find a satisfactory way of tackling the problem of the abnormal offender, countires need to: evaluate the appropriateness of their existing arrangements for prevention and treatment; review the procedures used when a mentally abnormal offender comes before the courts; try to provide treatment in both the penal and the mental health systems which allows for cross-movements between systems when they will be in the interest of the offender; review the criteria used in making mental hospital or prison discharge decisions, and provide adequate aftercare facilities. The papers included in this CIBA Foundation International Symposium,held July 1967, deal with the areas of antisocial behavior and its treatment and care, social problems, and legal problems. Since they represent an intradisciplinary outlook, the book should be of interest to psychiatrists, psychologists, sociologists, lawyers, penologists, and legislators. (188 refs.) - *J. K. Wyatt.*

CONTENTS: Will This Man Be Dangerous? (Sturup); Schizophrenia and Delinquency: the Inadequacy of Our Conceptual Framework (Kloek); Cerebral Disease and Mental Disorders of Old Age as Causes of Antisocial Behavior (Roth); Affective Disorders: Cyclophrenia and Murder (Schipkowensky); Delinquent and Disturbed Behavior within the Field of Mental Deficiency (Shapiro); The Moral Responsibility for Welsh Psychopaths (Craft); Threshold of Tolerance in Various Population Groups Illustrated by Results from Danish Criminological Twin Study (Christiansen); Custody and Release of Dangerous Offenders (McGrath); The Conventional Mental Hospital and the English Penal System (Rollin); Psychopathic and Neurotic Offenders in Mental Hospitals (Gibbens, Briscoe, & Dell); Aftercare for Mentally Abnormal Offenders in the Netherlands (Kempe); The Mentally Disordered Offender and the Criminal Law (Goldstein); The Concept of Mental Abnormality in the Administration of Justice Outside the Courtroom (Bittner); Hospital Orders (Walker & McCabe); and Psychiatric and Legal Approaches in the Treatment of Delinquents (discussion).

1351 SHAPIRO, ALEXANDER. Delinquent and disturbed behavior within the field of mental deficiency. In: De Rueck, A. V. S., & Porter, Ruth, eds. *The Mentally Abnormal Offender*. Boston, Massachusetts, Little, Brown, and Company, 1968, p. 76-86.

Examination of the factors affecting delinquency in MRs indicates that delinquency is determined more by problems of personality structure and social environment than by the problem of low intelligence. An analysis of the cases of 42 female (mean IQ 73) and 154 male (mean IQ 81) adolescents who were admitted through the courts to the Unit for Adolescents with Behavior Disturbances at Harperbury Hospital, Hertfordshire, England for offenses against property, being beyond control, sexual offenses, aggressiveness and violent behavior, or drug taking revealed that the majority of these adolescents exhibited a general inadequacy. This inadequacy was manifested in an inability to establish meaningful peer relationships, lack of persistence, low frustration tolerance, disinterest, poor performance in work situations, and very poor work histories. The etiological factors involved in the cases of these MR delinquents were complex and difficult to determine. They frequently involved combinations of genetic, immaturity, organic, family, environmental, neurotic, and/or social factors. The therapy program of the Adolescent Unit was designed to use social therapy as a complement to psychotherapy. The results of treatment after a year of therapy were analyzed in terms of change within the hospital environment and revealed positive changes in attitude toward the hospital in readiness to accept help, and in ability to form social relationships and to function as group members. No changes were found in attitudes toward work. (10 refs.) - *J. K. Wyatt.*

1352 WALKER, NIGEL, & McCABE, SARAH. Hospital orders. In: De Rueck, A. V. S., & Porter, Ruth, eds. *The Mentally Abnormal Offender*, Boston, Massachusetts, Little, Brown, and Company, 1968, 219-234.

To get a picture of the operation of England's Mental Health Act of 1959 in regard to hospital orders, dispositions by higher and lower criminal courts in England and Wales from April 1963 to March 1964 were reviewed. Of the 969 male offenders, 42% were diagnosed as schizophrenics, 34% were classified as MR, and 12% were considered to have personality disorders. Of the 330 MRs, 7% were characterized as SMR. Theft, comprising 42% of the total offenses, occurred most frequently for all medical categories; MRs committed 173 of the 404 offenses. Sexual offenses were the second most frequent offense with MRs committing 90 of the 155 offenses; however, very few MRs had had previous convictions. Very few of the MRs were discharged during the first year of the confinement, and of these 1/2 were rehospitalized or reconvicted within a year. The picture was somewhat similar for the other categories. (5 refs.) - *A. Huffer.*

1353 ROUSSEAU, C. Les troubles de la personnalite chez les enfants dits "debiles profonds": Approche psychopedagogique de l'autisme (Personality problems in profoundly retarded children: A psychopedagogic approach to autism). *Revue D'Hygiene et de Medecine Sociale*, 16(4):367-386, 1968.

Autism in children may be helped by competent psychopedagogic care, especially when the psychosis is caused by retardation or maternal rejection, as shown by exemplary cases of 8 seemingly autistic children in 3 Medico-Pedagogic Institutes. Autism in a retarded child, a pseudo-autism, is caused by intellectual deficiency which inhibits the child's ability to communicate or collaborate with a group. Autism of an abandonnic is caused because a child has been deprived of long-lasting affection from 1 person. This is a pseudo-autism, and can often be treated successfully. The truly autistic child is unconscious of the world from which he is separated, and is psychotic. He does not speak, as he has been deprived of a mother's conversation when he was an infant. In working with the 3 types of autism, the retarded, the abandonnic, and the psychotic, the educator must be able to accept the child for what he is, and communicate with him with both words and movement. Physical contact is also necessary. When working with the retarded, the child's ability to communicate should be developed as fully as possible. The abandonnic should slowly be helped by the comprehension that his daily routine will not be interrupted. His fear that he will be left must be dispelled. All 3 categories of autism can be helped by affection, conversation, and teaching the child to like himself. Pedagogic methods for teaching the autistic child must be improved. (11 refs.) - *M. Lenden*

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1354 COFFEY, HUBERT S., & WIENER, LOUISE L. *Group Treatment of Autistic Children.* Englewood Cliffs, New Jersey, Prentice-Hall, 1967, 132 p. $4.95.

The entire educational and therapeutic program at the East Bay Activity Center,Berkeley California, a private day-care center for severely disturbed children, is oriented toward group activities. "Play activity" groups composed of both autistic children and children with behavior disorders (the catalysts) are used to promote intensive interaction. Group membership is integrated in this manner so that the verbal, reality-oriented, socialized behavior of the catalysts can help to decrease the isolated, non-verbal behavior of the autistic children, and stimulate their interest in social relationships and interpersonal interactions. Group meetings are held in an enclosed area which appears to serve as a "passive restraint" on behavior, to have symbolic value, and to provide a "safety zone." Analysis of the results of a 2-year observational study which employed a coded data technique revealed no significant changes in the interaction level of the group. However, 3 catalysts and 1 borderline-autistic child exhibited significant improvement in their levels of interaction. Analyses of interactions with the therapist or with other children in the group revealed no significant changes. However, the presence of an overall general trend toward improvement suggests that further investigations of the effects of group therapy, which would employ different data collection techniques and different time spans, are warranted. Physicians, psychiatrists, psychologists, social workers, nurses, teachers, and parents of autistic or behavior disordered children will find the theoretical and practical data in this book of interest. (12-item bibliog.) - *J. K. Wyatt.*

CONTENTS: History and Development of the Center; The Nature of Childhood Autism and Schizophrenia; The Function of Group Psychotherapy with Disturbed Children; The Development of the Program; The Conception and Philosophy of Group Therapy; Critical Factors Demonstrating the Philosophy and Practice of EBAC Group Therapy; The Children in the Observed Group; Group Work with Parents; Methods and Results of Observational Study; Follow-up Studies of Children Who Have Been at the Center; and The Relationship of Day Care Centers to Public School Programs.

1355 WING, J. K., ed. *Early Childhood Autism: Clinical, Educational and Social Aspects.* New York, New York, Pergamon Press, 1966, 333 p. $6.00.

Investigations of the handicaps associated with early childhood autism by several disciplines indicate that children with this syndrome do not develop an understanding of the world because they are basically unable to integrate their visual and auditory experiences into meaningful patterns. Problems associated with autism are communication difficulties, behavioral abnormalities, emotional difficulties, and/or disturbed family relationships. Children with autism frequently have a number of secondary handicaps. Classic "autistic" behavior consists of the avoidance of eye to eye contact, aloofness from others, failure to play with peers, and inability to develop friendships. Although autistic children are often classified as MR, their test scores differ from those of other MRs in that they are usually characterized by extreme variability and a lack of constancy. In some cases an MR classification is erroneous and illustrates the deficiencies of tests of intellectual functioning. In other cases intellectual deficit is correctly identified and appears to be due to defects in comprehension, symbolic thinking, and abstract concepts. Early recognition of basic disability patterns and the provision of maximum remedial help foster the child's natural tendency toward improvement with age, allow for the management of disturbed behavior, expose the child to skilled remedial teaching which will minimize disabilities, and provide needed family support. The editor advocates a team approach to the community care of autistic children. This book should be of interest to psychologists, psychiatrists, educators, social workers, and parents of autistic children. (61 refs.) - *J. K. Wyatt.*

CONTENTS: Diagnosis, Epidemiology, Aetiology (Wing); Behavioural and Cognitive Characteristics (Rutter); Prognosis (Rutter); Medical Treatment (Connell); A Program for the Establishment of Speech in Psychotic Children (Lovaas); Psychological Assessment (Mittler); Psychological Research (Hermelin); Problems in Providing Special Education (Wilson); A Clinical Interpretation of Remedial Teaching (Wing & Wing); Teaching Autistic Children (Elgar); Services for Autistic Children in Middlesex (Lotter); Counseling and the Principles of Management (Wing); Prescription of Services (Wing & Wing); and An Autistic Child (Lauder).

1356 SHEEHAN, JOSEPH, MARTYN, MARGARET M., & KILBURN, KENT L. Speech disorders in retardation. *American Journal of Mental Deficiency*, 73(2):251-256, 1968.

A survey of speech disorders among MR patients at Porterville State Hospital, California, revealed the incidence of stuttering to be about the same as that for the normal population. Each of 216 patients from 5 wards were seen for individual speech examination by 2 speech pathologists. Over 1/2 this population had either no speech or severely delayed speech. Dental abnormalities and articulation disorders were common. Only 12% of the patients examined had speech that could be considered normal. Three voice problems, 2 truly aphasic patients, 1 stutterer, and 1 clutterer made up the remainder of speech disorders found in the group. (12 refs.) *Journal abstract.*

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1357 SCHAEFFER, MARY LOU, & SHEARER, WILLIAM M. A survey of mentally retarded stutterers. *Mental Retardation (AAMD)*, 6(6):44-45, 1968.

Previous studies dealing with the incidence of stuttering among the MR have utilized relatively small samples and have yielded widely varying results. In the present survey of a large state school for MR, a 7.6% incidence of stuttering was found among those residents having communicable speech. IQ scores for stutterers did not vary significantly from those of the non-stutterers. It is suggested that the MR stutterer be more carefully considered in the development of theory and therapy for the stuttering problem. (9 refs.) *Journal abstract.*

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1358 FULTON, ROBERT T., & LLOYD, LYLE L. Hearing impairment in a population of children with Down's syndrome. *American Journal of Mental Deficiency*, 73(2):298-302, 1968.

An institutionalized population (N=79) of children and young adults with Down's syndrome (mongolism) was auditorily assessed and identified. Results indicated that 17 of the 31 Ss with hearing impairments manifested conductive type losses. A discussion of the results and how they differ from previous data is presented. (11 refs.) - *Journal abstract.*

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1359 DUGAS, JEANNE L., & *BAUMEISTER, ALFRED A. A comparison of intra-subject variability in auditory difference limens of normals and retardates. *American Journal of Mental Deficiency*, 73(3):500-504, 1968.

The intra-subject variability of normal and retardate groups was compared in measures of difference limens (DL) for intensity. Thresholds were obtained under 3 levels of task-irrelevant stimulation produced by 2 light bulbs. Mean DLs differed significantly between intelligence groups and in an interaction involving intelligence, distractor, and order of distractor presentation. Standard deviations for DL and constant error measures differed reliably between intelligence levels. This finding lends support to an explanation of retardate behavior which includes the concepts of an upper limit of performance and efficiency in working close to that limit. (11 refs.) - *Journal abstract.*

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1360 LLOYD, LYLE L., REID, MICHAEL J., & McMANIS, DONALD L. Pure tone reliability of a clinical sample of institutionalized MR children. *American Journal of Mental Deficiency*, 73(2):279-282, 1968.

A report on the reliability of pure tone data obtained from a random clinical sample of 24

institutionalized MR children covering a range of measured intelligence (MI) levels and auditory sensitivity. The thresholds for 500, 1,000, 2,000, and 4,000 eps for both ears were determined on each S on consecutive days. The relatively high rank order correlations and other statistical analysis demonstrate the reliability of pure tone audiometry with both the 12 high (MI=-II and -III) and 12 low (MI=-IV and -V) level Ss. (13 refs.) *Journal abstract.*

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1361 NEELLEY, JAMES N., EDSON, SANDRA K., & CARLILE, LARRY. Speaking voice fundamental frequency of mentally retarded adults and normal adults. *American Journal of Mental Deficiency*, 72(6):944-947, 1968.

Analyses of the fundamental frequency of the speaking voice of 14 normal adults (mean CA, 18-9 yrs) and 14 MR adults (mean CA, 18-2 yrs) were made. All Ss passed the auditory screening test. Ss learned to respond to each of a series of 18 pictures in a manner which would allow voice frequency comparisons. Voice tapes were made and transferred to recording discs which were used to produce oscillograms. Average fundamental frequency and variability measures were then calculated. The difference between the mean fundamental frequency of the 2 groups was significant at the .05 level with the MRs having a higher frequency. The median scores produced similar results. The average fundamental frequency of the MRs was about 1.35 tones higher than the normals. However, this difference alone probably would not provide perceptual differentiation of the groups. Sampling over a wider range of ages or longitudinal studies would provide additional information. (8 refs.) - *E. R. Bozymski.*

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1362 SCHULZE, ARNO. Zur Versorgung geistig behinderter Hor- und Sprachgeschadigter (On the care of mentally retarded with hearing and speech defects). *Zeitschrift fur Heilpadagogik*, 18(6):348-351, 1967.

MR children with IQs between 25-55 account for 0.5% of grade-school-age children (31,200 in 1962-63); they generally have concomitant hearing and speech defects. Special training methods and hearing aids therapy (greater use of play, individual slow teaching, intensive hearing training) must be developed for them. When they have developed basic hearing and speech capabilities, they would be capable of social intercourse and instruction in special schools. (8 refs.) - *S. P. Glinsky, Jr.*

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1363 MILLER, ARNOLD, & MILLER, EILEEN ELLER. Symbol accentuation: The perceptual transfer of meaning from spoken to printed words. *American Journal of Mental Deficiency*, 73(2):200-208, 1968.

It was hypothesized that retarded people could learn to recognize and discriminate unfamiliar printed words more readily via "accentuated" conditions in which the properties of an object or event were blended with a word's conventional form than via a conventional presentation of printed words. In 2 experiments using, respectively, flash cards and stroboscopic presentation of "accentuated" and conventional conditions, it was found that the "accentuated" condition accompanied significantly more rapid recognition of unfamiliar words and an equivalent ability to discriminate these words in their conventional forms. (6 refs.) - *Journal abstract.*

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1364 COLLINS, MARIANNE. Auditory training and language development in infants. *Eye, Ear, Nose and Throat Monthly*, 47(9):408-411, 1968.

Before receptive and expressive language can be developed in the young, hearing-impaired child, he must first develop auditory awareness. In cases where there is residual hearing, this auditory awareness can often be achieved by amplification. Teaching the hearing-impaired child to take advantage of all acoustic cues available is a process known as auditory training. After the child has learned to listen, he should learn localization of sound followed by discrimination and differentiation. The initial goal in

language development is to develop comprehension; this can be achieved in the hearing-impaired child by using everyday living situations and games. Babbling and other vocalizations must be encouraged and reinforced so that voice production and quality are maintained. Sense training is important in helping the deaf child realize that things have labels and/or signs and eventually that ideas can be conveyed. Although it takes much longer for the aurally handicapped child to express himself in intelligible speech, many can do it. (6 refs.) - *E. R. Bozymski.*

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1365 THOMPSON, KAREN. Language skills are developed. *ICRH Newsletter,* 3(2):1, 4, 1968.

Physical education of the MR is the foundation upon which development of basic communication is based. MRs often have a CNS impairment which hinders the normal process of maturation--responding to tactual-kinesthetic movements and subsequently developing auditory and visual perception; therefore, the relationship between sensory cognizance and language development which occurs naturally in the normal child must be taught to the MR. Physical education is used as a stimulus in realizing this relationship in the Orange Unified School District (California) which is staffed with 7 teachers who provide such a program for MR children (grades 1-12). Use of physical education to facilitate the development of communication is manifested in a modified square dance in which physical responses necessitate the MR's comprehension of verbal instruction, thereby strengthening the relationship between physical and verbal communication. (No refs.) - *J. P. West.*

Orange Unified School District
Orange, California

1366 KARNES, MERLE B. *Helping Young Children Develop Language Skills: A Book Of Activities.* Washington, D. C., Council for Exceptional Children, 136 p. (Price unknown)

The activities in this book are based on communication processes derived from the Illinois Test of Psycholinguistic Abilities and reflect a language model composed of decoding, association, integration, encoding, and memory processes. Teachers can use specific prototype activities to enhance the development of psycholinguistic skills, and to facilitate the learning of content material. A teaching style should emphasize the various aspects of language processes and should not rely on only 1 or 2 aspects of communication. Contrast and control studies indicate that significantly greater improvement resulted when experimental groups of 3-, 4-, and 5-year-old disadvantaged children received training on auditory decoding, visual decoding, vocal encoding, motor encoding, auditory vocal association, visual motor association, auditory vocal sequential process, and visual motor sequential process activities. The linguistic activities in this manual are appropriate for small groups of disadvantaged preschool children and may be adapted for use with larger groups, more advantaged children, MR children, and children with learning disabilities. This book should be of interest to educators and special educators. (No refs.) *J. K. Wyatt.*

CONTENTS: Listening Skills (Auditory Decoding); Understanding Materials Presented Visually (Visual Decoding); Verbal Expressive Abilities (Vocal Encoding); Motor Expression (Motor Encoding); Verbal Associations (Auditory Vocal Association); Visual Associations (Visual Motor Association); Standard Syntactical Constructions and Auditory Closure (Auditory Vocal Automatic Process); Auditory Memory (Auditory Vocal Sequential Process); and Visual Memory (Visual Motor Sequential Process).

1367 MUELLER, MAX W., & DUNN, LLOYD M. Effects of level #1 of the Peabody Language Development Kits with educable mentally retarded children--An interim report after 4 1/2 months. *IMRID Papers and Reports,* 4(5):1-5, 1967.

A short-term, intensive language training program (75-90 1/2-hr lessons for 4 1/2 mos) with EMRs produced significant ($p<.05$) improvement in oral language, as measured by 4 subtests of the Illinois Test of Psycholinguistic Abilities (ITPA). From 36 primary

and intermediate classes in the public schools, a sample of 283 experimental Ss and 85 controls was drawn. Evaluation of language growth was made with the auditory-vocal association, auditory-vocal automatic, visual-motor sequencing, and auditory decoding subtests of the ITPA. The control group made an average gain in language age (LA) of 2.59 months; whereas, the experimental group's average gain in LA was 4.62 months. Interpretation of the results was complicated by a significant interaction effect between LA gain and special class. Racial and/or age differences of the Ss in different classes may be possible explanations for the difference among classes in language growth. (7 refs.) - *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1368 DUNN, LLOYD M., & MUELLER, MAX W. Differential effects on the ITPA profile of the experimental version of level #1 of the Peabody Language Development Kits with disadvantaged first grade children. *IMRID Papers and Reports*, 4(6):1-9, 1967.

An oral language stimulation program lasting 30 minutes a day for 8 months was effective in improving associative and expressive language skills, as measured by the auditory-vocal association and vocal encoding subtests of the Illinois Test of Psycholinguistic Abilities (ITPA). Both the experimental group (N=509) and the control group (N=203) showed improvement (range of improvement 6-20 mos) on all 9 subtests of the ITPA. The pattern of control Ss' subtest scores remained essentially the same, suggesting that the regular first-grade language-arts program facilitates even growth in all language areas. Although training with the Peabody Language Development Kit (PDLK) showed very high gains in some areas, less substantial gains in memory, receptive language skills, and grammar indicate that the experimental version of the PDLK places unequal emphasis on the various aspects of oral language. (16 refs.) *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1369 DUNN, LLOYD M., POCHANART, PRAYOT, & PFOST, PHILIP. The effectiveness of the Peabody Language Development Kits and the Initial Teaching Alphabet with Disadvantaged Children in the Primary Grades: After two years. Nashville, Tennessee, Institute on Mental Retardation and Intellectual Development, 1967, 137 p. (*IMRID Behavioral Science Monograph, Number 6*).

In many cases the effectiveness of the initial teaching alphabet (i/t/a) and the Peabody Language Development Kit (PLDK) on growth in language, intelligence, and achievement was a function of the length of use of the PLDK and/or the sex of the Ss, with the most effective treatment being the i/t/a and the PLDK for 2 years. Testing with both the Illinois Test of Psycholinguistic Abilities and the Peabody Language Production Inventory indicated that gain in language age (LA) was a direct function of length of use of the PLDK regardless of which reading method was employed. After using the PLDK for 1 year, boys made a significantly greater increase in MA (Stanford-Binet) than girls; however, after 2 years the opposite was true. Differences in increase in intellectual growth were also due to an interaction between the i/t/a and the PLDK. Both spelling and reading improvement were facilitated more by the PLDK than the i/t/a alone. The PLDK was presented under several different personnel arrangements: teacher; teacher plus visiting teacher; or teacher plus community volunteer. There were no significant differences in LA, MA, or achievement as a function of teaching personnel. The above program resulted in significant improvement in the language and reading skills of southern, Negro primary pupils who typically enter school with restricted, non-standard oral language. (30 refs.) *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1370 WOODCOCK, RICHARD W., & CLARK, CHARLOTTE R. Comprehension of a narrative passage by fifth grade children as a function of listening rate and presentation strategy. *IMRID Papers and Reports*, 5(3):1-12, 1968.

When spoken information is presented at rates faster than the normal speaking rate, more information is processed per unit of time and attention is increased; therefore, listening at high speeds would be expected to be more efficient than listening at the normal rate. Eighty-four fifth graders of average intelligence listened to passages presented through

earphones. Three strategies of presentation (single presentation followed by test, double presentation--2 presentations followed by test, and split-double presentation--1 presentation followed 1 week later by another presentation and test) and 4 different rates (178, 278, 328, and 378 words/min) of presentation were compared. All Ss were retested on the material 1 week after the first test. The prediction that learning would be greater at the slower rates was confirmed ($p<.001$). Contrary to expectation, there was no significant difference between test scores as a function of presentation strategy or retention period. An unexpected significant ($p<.001$) interaction effect between rate and retention period indicated that, at the slower rates, retention is better on immediate testing, while at faster rates, retention is better 1 week later. The most efficient use of time was listening once at 278 words/minute. (6 refs.) - *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tenneseee 37203

1371 WOODCOCK, RICHARD W., & CLARK, CHARLOTTE R. Comprehension of a narrative passage as a function of listening rate, recall period, and IQ: Nashville third and sixth grade study. *IMRID Papers and Reports,* 4(17):1-11, 1968.

Test scores following the presentation of narrative material at faster than the normal rate of speaking showed that high speed listening can be effective with elementary school children of both high and low intelligence. A sample of 117 elementary school children was divided into "low IQ" (mean 90) sixth graders and "high IQ" (mean 108) third graders. Narrative passages were presented at 8 different rates ranging from 78 to 428 words/minute (wpm). Retention was tested immediately following presentation and again 1 week later. Significant differences between test scores were found due to rate ($p<.001$), retention ($p<.001$), and IQ level ($p<.016$). Both immediate and 1-week retention scores were highest at the lower rates. The low IQ group performed best when the material was presented at 78 wpm, while the high IQ group had better retention following presentation at 128 wpm. However, when the performance was analyzed in terms of the amount of learning/unit of time, 228 and 278 wpm were most efficient. (6 refs.) - *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1372 CLARK, CHARLOTTE R., & WOODCOCK, RICHARD W. Standardized listening passages. *IMRID Papers and Reports,* 4(2):1-12, 1967.

The development of a set of standardized materials for use in research in the area of time-compressed speech has facilitated the comparison of results from different studies. The materials include: 3 passages written at the fifth grade level; tape recordings of the passages at 11 different rates; recordings of the instructions and test questions; and directions for preparing and using a set of slides to accompany the passages. Copies of the materials (tapes) can be obtained from the Center for Rate Controlled Recordings, University of Louisville, Louisville, Kentucky. Data from 190 third and fourth graders was used to establish a set of standard scores for the 2 forms of the multiple choice test following the third passage. (8 refs.) *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1373 TAYLOR, ANNETTE P., & POLLOCK, BARBARA E. A structured program of learning for moderately retarded deaf adults. *Volta Review,* 70(2):114-117, 1968.

An exploratory learning program was developed to improve the communication skills of 2 institutionalized females ages 44 and 31 years with IQs of 83 and 61, respectively. Neither woman had been exposed to formal learning for approximately 20 years. The speech therapist and a teacher worked with the Ss individually for 16 hours/week for 8 weeks. Educational content during the morning included the teaching of modified time concepts and language arts. During the afternoon, the home economic facilities were used to apply this instruction to social situations. Social learning entailed simulated preparation of meals as well as serving, eating, introducing guests, and acting as hostess and guest. The program also included field trips to the bank, post office, drug store, department store, historic sites, and lunch at a restaurant. Results of the California Achievement Test given before and after the 8-week period indicate that progress was made although the test was greatly altered to accommodate the needs of the Ss. Motivation and a positive attitude were very high. (No refs.) - *G. Trakas.*

No address

Mental Processes and Psychodiagnostics

1374 STEPHENS, WYATT E. Labeling errors of mentally subnormal children in a concept attainment task. *American Journal of Mental Deficiency*, 73(2):273-278, 1968.

Mentally subnormal Ss have been reported to exhibit an inability to provide adequate labels for concepts they have employed in problem-solving situations. This study sought to spell-out further the linguistic deficiencies of retarded children by investigating the types of errors they exhibited when required to provide verbal labels for concepts they had successfully used. The findings indicated that retarded children offer fewer verbal responses which tend to be low-level descriptions of stimulus appearance or function. The question was raised whether this is because of developmental status or motivational factors. (13 refs.) - *Journal abstract.*

School of Education
Texas Christian University
Fort Worth, Texas 76120

1375 McMANIS, DONALD L. Relative thinking by retardates. *American Journal of Mental Deficiency*, 73(3):484-492, 1968.

Retardates of matched MA at 2 IQ levels were administered Piaget's "right-left" and "brother-sister" tests. Retardate MA and normal CA correspondence was good for concrete understanding of both concepts. Abstract right-left understanding was CA related (low IQ retardates>high IQ retardates>normals). Abstract understanding of kinship, however, was not a simple function of either MA or CA (high IQ retardates>normals>low IQ retardates). Understanding of the class concept of brother-sister was a function of IQ (normal> high IQ retardates>low IQ retardates). (8 refs.) - *Journal abstract.*

Parsons State Hospital and
Training Center
Parsons, Kansas 67357

1376 BUDOFF, MILTON, MESKIN, JOAN D., & KEMLER, DEBORAH J. Training productive thinking of EMRs: A failure to replicate. *American Journal of Mental Deficiency*, 73(2): 195-199, 1968.

The present study did not replicate Rouse's (1965) effort to improve EMRs' productive thinking scores by use of a special curriculum unit. Adolescent EMRs from a northern urban area failed to improve their scores on selected subtests of the Minnesota Tests of Creative Thinking to the degree that Rouse's southern urban samples did, after exposure to the unit. Discrepancies between the studies may be due to lessened apprehension about the testing process by the Boston Ss on the pretest. (4 refs.) - *Journal abstract.*

20 Sacramento Street
Cambridge, Massachusetts 02138

1377 PANEY, HENRY, & HORROCKS, CAROL. Creativity in a troop of low average intelligent boy scouts. *Adolescence*, 2(6): 231-241, 1967.

Fourteen adolescent boys (CAs 10 to 14) with an IQ range of 63 to 94 were members of a Boy Scout troop drawn from public school special education classes and were tested for creativity, originality, and complexity of thinking, and personality traits. On the Barron-Welsh Art Scale, the Torrance Figural Test of Creative Thinking, and the California Test of Personality, they scored much lower than normal boys of comparable age or grade level. Low intelligence, inability to accumulate knowledge with which to be creative, and poor social relationships evidenced by school achievement, family rejection, and individual deviation combined to produce a poor self-concept which was only partially alleviated by the feelings of comradeship and equality in the scout troop. (3 refs.) *E. L. Rowan.*

Department of Sociology
Middlebury College
Middlebury, Vermont 05753

1378 STEVENSON, HAROLD W., HALE, GORDON A., KLEIN, ROBERT E., & MILLER, LEON K. Interrelations and correlates in children's learning and problem solving. *Monographs of the Society for Research in Child Development*, Serial No. 123, 33(7), Chicago, Illinois, University of Chicago Press, 1968, 68 p. $3.00.

This monograph is directed toward analyses of individual differences in children on tasks involving learning and problem solving. Significant areas of interest are: types of learning and problem solving tasks; effects of intelligence; and "long-term" learning. The Ss for the first study consisted of seventh graders grouped on the basis of intelligence level--bright, average, and dull. The dull Ss were in special classes for the EMR and retardation was diagnosed, in most cases, as familial. The mean verbal IQs for the groups ranged from 71.72 to 121.41. Twelve learning tasks (defined as requiring new information) or problem solving tasks (considered to depend upon applying previous knowledge) were administered by 16-mm sound films with Ss answering in booklet form. The second experiment, termed the developmental study, consisted of 243 boys and 232 girls enrolled in 15 classes ranging from the third through the seventh grade. Nine tasks were given during 6 days of testing. A high frequency of significant correlations was found within learning and problem solving tasks as well as across the 2 categories. Level of intelligence appeared to be an important variable. Sex differences played a role in performance and the "patterns of relations" varied in accordance with different IQ levels. Highest correlations were found in tasks that were similar in structure. A hypothesis of a general learning factor could not be supported by data. Results indicate that a "series of factors" are involved in learning and problem solving. Data for the MR groups suggested that difficulties are present in application of previous information rather than problems in learning new material. Feedback appears to be of major importance. (46 refs.) *B. Bradley.*

1379 BLAKE, KATHRYN A., & WILLIAMS, CHARLOTTE L. Induction and deduction and retarded, normal, and superior subjects' concept attainment. *American Journal of Mental Deficiency*, 73(2):226-231, 1968.

Retarded, normal, and superior groups were compared on their attainment of concepts by deduction, induction--discovery, and induction--demonstration. With MA held constant, the groups did not differ in level of concept attainment; with CA held constant, the superior exceeded the normal and the retarded while the normal exceeded the retarded. The methods of concept attainment did not differentially affect the relationships among the groups. For all groups, deduction was the most effective while the 2 inductive methods were similarly effective. (23 refs.) *Journal abstract.*

College of Education
University of Georgia
Athens, Georgia 30601

1380 PARASKEVOPOULOS, IOANNIS. Developmental stages for decoding symmetry in retarded and gifted children. *American Journal of Mental Deficiency*, 73(3):447-454, 1968.

Seventy-nine EMR and 64 gifted children reproduced from memory double, bilateral, horizontal, and asymmetrical dot patterns. Mean errors for the 4 modes were significantly different. Multiple comparisons revealed that the onset of the effective structures to decode symmetry is a function of maturational and cognitive factors. EMR decode double symmetry at the eighth year of age and bilateral symmetry at the ninth year of age. Horizontal symmetry was not decoded even by as old at 16 years of age EMR. Gifted children decode double symmetry early in preschool age, bilateral symmetry at the sixth year of age, and horizontal at the eleventh year of age. (23 refs.) - *Journal abstract.*

University of Illinois
409 East Chalmers
Champaign, Illinois 61820

1381 RAPIER, JACQUELINE LOUISE. The learning abilities of normal and retarded children as a function of social class. *Dissertation Abstracts*, 67(11,A):3730-3731, 1967.

Comparison of learning ability of normal (100-110 IQ) and retarded (63-78 IQ) elementary school children from different social backgrounds indicated that serial and paired-associate learning is related to IQ and socio-economic status. Twenty-four hours after learning a serial and a paired-associate list, 40 Ss learned another paired-associate list under mediation conditions while 40 Ss in the control group learned the same list without

mediation. One week later, all Ss learned a third paired-associate list with no mediation provided. A significant mediation effect was found for the second day, but it did not transfer a week later for any group. Low socioeconomic MRs were superior in performance on all paired-associate lists when compared to high socioeconomic MRs; they also did as well as normals on the third list. (No refs.) *A. Huffer.*

No address

1382 MONEY, JOHN. Cognitive deficits in Turner's syndrome. In: Vandenberg, Steven G., ed. *Progress in Human Behavior Genetics: Recent Reports on Genetic Syndromes, Twin Studies, and Statistical Advances.* Baltimore, Maryland, Johns Hopkins Press, 1968, Chapter 4, p. 27-30.

Although it is a mistake to associate the behavioral characteristics of MR with those of Turner's syndrome, individuals with this disorder have shown 3 types of cognitive deficit: space-form dysgnosia; directional-sense dysgnosia; and mild dyscalculia. On the Wechsler Intelligence Scales, the perceptual organization score (Block Design and Object Assembly) and freedom from distractibility score (numerals and calculations) are often extremely low when compared to verbal comprehension scores. The 3 types of deficit have also emerged in research which used other tests; this suggests a developmental right parietal lobe anomaly which is presumably related to the chromosomal aberration of this syndrome. (14 refs.) - *K. Drossman.*

1383 MURPHY, LOIS B. Spontaneous ways of learning in young children. *Children,* 14(6):210-216, 1967.

Learning processes in infants are continuous and progressive in a stimulating environment. Passive observation in the first few days of life changes with age to active efforts to see everything and to respond to surroundings. As the infant learns to differentiate colors, sounds, and kinds of movement, he enjoys watching people; watching of "things" which have no movement comes later when he is able to navigate and investigate more actively his environment. As early as 1 month of age, infants are able to move their bodies to make themselves comfortable; each motor skill learned paves the way, not only for the acquisition of more complex motor skills, but also for the development of resources for further learning. Learning originates in individual reaction and adaptation to fear, pain, pleasure, frustration, and love, as well as by imitation of and participation with others in 2-person or group activities. Children from reasonably stimulating environments have been found to exhibit much more curiosity than children from disadvantaged homes who, even after several months of encouragement, were less interested in the world around them. Adequate environmental stimulation is essential to the important steps of "learning to learn" and "wanting to learn" which are basic to the child's education. (25 refs.) - *E. F. MacGregor.*

Division of Developmental Studies
Menninger Foundation
Topeka, Kansas 66601

1384 PREHM, HERBERT J. Rote learning in retarded children: Some implications for the teaching-learning process. *Journal of Special Education,* 1(4):397-399, 1967.

A brief review of the literature on the learning and memory characteristics of MR children shows a general agreement that they have both a learning and retention deficit on paired-associate tasks. Research also suggests that MRs: have greater performance variability than normals and, therefore, need more individualized instruction; profit more from distributed practice than normals, for example, three 10-minute periods is more beneficial than one 30-minute period; learn more rapidly with concrete objects than with pictures; are undisturbed by normal room noise; show enhanced learning performance with long (4-7 sec) exposure to stimulus objects; learn more slowly if required to spell out, rather than simply to pronounce, the name of the response item; can reduce their retention deficit by overlearning and this reduction in retention is directly proportional to the difficulty of the task; and increase retention with increasing time intervals between presentations of a single paired associate. (12 refs.) *E. F. MacGregor.*

University of Oregon
Eugene, Oregon

1385 MADSEN, MILLARD C., & CONNER, KATHERINE J. Categorization and information reduction in short-term memory at two levels of intelligence. *American Journal of Mental Deficiency*, 73(2):232-238, 1968.

High grade MRs and college students received pre-training in the coding of 18 categories of 4 words each. Ss then were tested for the free recall of lists of 12 words which differed in amount and type of categorization. The results indicated that the number of words recalled by both groups increased with increased degrees of list categorization. College students categorized significantly more than retardates when an uncorrected measure of categorization was used. When the amount of categorization was based on the number of words recalled, however, there were no significant differences between groups. (13 refs.) - *Journal abstract.*

Psychology Department
University of California
Los Angeles, California 90024

1386 SCHENCK, HERBERT U., JR., & SHEPHERD, DEE. Probability learning strategies of the retarded. *American Journal of Mental Deficiency*, 73(3):391-395, 1968.

Forty-eight hospitalized retardates learned dual 4-choice tasks with 70% probable reinforcement, 3 visual stimulus orders, 2 instruction conditions, and 2 reinforcement conditions. Two stimulus orders and auditory reinforcement enhanced learning. Six strategies were noted. Comparison of strategy by MA level to data from the non-retarded showed completely different curves. Two stimulus orders tended to elicit specific strategies. Forty-six percent of Ss also varied strategies among tasks. (19 refs.) - *Journal abstract.*

Porterville State Hospital
P. O. Box 2000
Porterville, California 93257

1387 PENNEY, RONALD K., PETERS, RAY DeV., & WILLOWS, DALE M. The mediational deficiency of mentally retarded children: II. Learning set's effect on mediational deficiency. *American Journal of Mental Deficiency*, 73(2):262-266, 1968.

A 3-list paired-associate task (AB, BD-DC, AC) was employed as a pretest to assess the mediational ability of 24 MR children. Twelve of the children were then given a learning set task (LS) while the remaining 12 children (of comparable MA) were given an operant task (OP). Both the LS and the OP groups were then readministered the 3-list paired-associate task as a posttest of their mediational ability. Results indicated that Ss who received LS had their mediation scores increased on posttest relative to Ss administered OP. It was hypothesized that LS afforded an opportunity for Ss to learn both to organize behavior verbally and to use mediators. (3 refs.) - *Journal abstract.*

Department of Psychology
University of Waterloo
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1388 DREW, CLIFFORD J., PREHM, HERBERT J., & LOGAN, DONALD R. Paired associate learning performance as a function of association value of materials. *American Journal of Mental Deficiency*, 73(2):294-297, 1968.

The associative learning performance of 48 MR and 48 non-retarded Ss was investigated as a function of the association value of paired words. Data analysis revealed that both S groups performed significantly better on high associative value than on low associative value pairs. Results also indicate that non-retarded Ss were significantly superior to retardates at both levels of association value. These data provide support for the hypothesis that non-retarded Ss form implicit associative responses more spontaneously than retarded Ss. (10 refs.) - *Journal abstract.*

University of Oregon
1662 Columbia Street
Eugene, Oregon 97403

1389 SCHEFFELIN, MARGARET A. A comparison of four stimulus-response channels in paired-associate learning. *American Journal of Mental Deficiency*, 73(2):303-307, 1968.

Twenty-four retarded Ss with Down's syndrome learned 4 lists of paired-associates, each list in a different condition: visual-motor, visual-vocal, auditory-motor, and auditory-vocal. Learning was to a double criterion: 2 consecutive anticipations of each pair, or 10 trials. Ss made twice as many errors under the auditory-vocal condition as under the other conditions. Results were interpreted as being due to the effect of all-verbal pairs. (6 refs.) - *Journal abstract.*

Children's Research Center
University of Illinois
Champaign, Illinois 61820

1390 MORDOCK, JOHN B. Distribution of practice in paired-associate learning. *American Journal of Mental Deficiency*, 73(3): 399-404, 1968.

Dull and average Ss matched at 3 age-levels performed on a paired-associates learning task. Half of each intelligence group performed under massed practice and 1/2 under distributed practice. Two older groups of dull Ss performed more poorly than the average regardless of practice conditions, and the effects of practice conditions were not consistent across age-levels. Two groups of average Ss benefited from distributed practice only when the intertrial activity made possible rehearsal, while the oldest group of dull Ss benefited regardless of intertrial activity. The findings do not clearly support predictions from the consolidation hypothesis. (11 refs.) - *Journal abstract.*

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and Training
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1391 GORDON, MUSETTA C. Some effects of stimulus presentation rate and complexity on perception and retention. *American Journal of Mental Deficiency*, 73(3):437-445, 1968.

Stimulus presentation rate may both enhance and hinder recall of stimuli, depending upon the interacting effects of stimulus complexity and the level of intellectual competency of the Ss. A stimulus presentation rate of 120 units/minute did not affect recall of simple stimuli for 36 normal Ss, but 36 retarded Ss' performance was impaired by this rate at all levels of stimulus complexity. Reasons are suggested why variability of performance is greater for retarded Ss than for normals and why more order errors occur at slower rather than faster stimulus presentation rates. (10 refs.) - *Journal abstract.*

Veterans Hospital
Des Moines, Iowa 50308

1392 LOGAN, D. R., PREHM, H. J., & DREW, C. J. Effects of unidirectional training on bidirectional recall in retarded and nonretarded subjects. *American Journal of Mental Deficiency*, 73(3):493-495, 1968.

The forward and backward recall performance of 48 MR and 48 non-retarded Ss was investigated as a function of association value. Analysis of immediate recall performance revealed that neither the main effects (MR vs normal; high associative value vs low associative value; forward vs backward recall) nor their interactions were statistically significant. At 24 hours the effect of S classification was significant; the other main effects and all interaction effects were non-significant. The data are inconsistent with the hypothesis that retardates will exhibit a short-term memory deficit but not a long-term memory deficit; provide support for the associative symmetry concept; and provide no support for the hypothesis that the retardate exhibits an incidental learning deficit. (24 refs.) *Journal abstract.*

School of Education
University of Utah
Salt Lake City, Utah 84112

1393 ALLEY, GORDON R. Perceptual-motor performances of mentally retarded children after systematic visual-perceptual training. *American Journal of Mental Deficiency*, 73(2): 247-250, 1968.

This study investigated the effects of an extended, systematic training program of visual-perceptual activities on sensory-motor, visual perception, and concept formation tasks of MR children. Ten identical criterion measures were utilized as pretests and posttests in conjunction with a 2-month training program. Both the experimental and control groups' mean scores on several criterion measures reflected improvement when comparing the pretest and posttest administration. However, when the analysis of covariance was applied, no significant differences were evident between the adjusted posttest mean scores of the 2 groups under study. (12 refs.) *Journal abstract.*

Child Development Clinic
University of Iowa
Iowa City, Iowa 52240

1394 WATSON, LUKE STEPHENS, JR. The relationship between discrimination and stimulus generalization in severely retarded children. *Dissertation Abstracts*, 27(11,B): 4152-4153, 1967.

Twelve institutionalized SMRs (mean IQ, 25; mean CA, 11 yrs) and 6 normal (mean CA, 11.3 yrs) were evaluated under 4 discrimination

training procedures to determine their stimulus generalization performance. The Ss were trained to respond differentially to the presence or absence of a 7-inch black disc. The generalization test consisted of 7-, 4-, 2-, and 1-inch discs. For the SMRs, slope generalization gradients were found consistently under the 2-stimulus discrimination training; the gradients for 1-stimulus, 1-stimulus with overlearning, and repeated testing following 1-stimulus discrimination training were relatively flat. The normal group, trained under the 1-stimulus discrimination only, exhibited a flat gradient also. Size was concluded to be a nonrelevant stimulus dimension. In the second study which used 18 normal (CA, 11.2 yrs) children divided into 2 groups (1 group was instructed to pull a lever when a specific disc appeared; the other group was told to pull the lever when a disc appeared) it was found that the response patterns during testing were a function of the way the Ss classified the test stimuli. (No refs.)
A. Huffer.

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Columbus, Ohio 43223

1395 RICE, DON MARTIN. The effects of visual perception techniques with cerebral palsied individuals functioning at a mentally retarded level. *Dissertation Abstracts*, 67(11,A):3732, 1967.

Frostig-Horne visual perception techniques were effective with cerebral palsied Ss functioning at an MR level. The pre- and posttest scores of the Marianne Frostig Developmental Test of Visual Perception correlated positively with the Peabody Picture Vocabulary Test MAs and IQs. (No refs.) - *A. Huffer.*

No address

1396 ADAIR, MARY ROBERTS. Visual discrimination learning in educable mentally retarded children. *Dissertation Abstracts*, 67(11,A):3714, 1967.

Fifty EMRs randomly assigned to 3 treatment groups learned a list of 5 paired-associates CVC trigrams with the vowels in each list printed in either red, blue, or black. Red was more effective than blue and blue was more effective than black in isolating the important stimulus dimensions. (No refs.)
A. Huffer.

No address

1397 McMANIS, DONALD L., & BELL, DONALD R. Risk-taking by reward-seeking, punishment-avoiding, or mixed-orientation retardates. *American Journal of Mental Deficiency*, 73(2):267-272, 1968.

Seventy-four retardates classified as reward seekers, punishment avoiders, or of mixed orientation were tested for risk-taking preferences in ring tossing. Payoff was equated for 3 empirically determined risk levels (100%, 50%, or 10% success); Ss chose their positions for each of 10 shots. Reward seekers took relatively more intermediate-risk shots than did punishment avoiders ($p<.05$), with mixed orientation Ss intermediate. More reward seekers than punishment avoiders took the greatest number of shots from the intermediate-risk position, with mixed orientation Ss intermediate ($p<.001$). The total group took more low- than high-risk shots ($p<.01$); boys took fewer low-risk and more high-risk shots than did girls ($p<.05$). (3 refs.) - *Journal abstract.*

Parsons Research Center
Parsons State Hospital and
Training Center
Parsons, Kansas 67357

1398 MORRIS, JOHN P. Changes in response force during acquisition and extinction in retarded children. *American Journal of Mental Deficiency*, 73(3):384-390, 1968.

Both response force and rate were observed in 3 retarded children during several sequences of reinforcement and extinction of a bar press. When extinction conditions were not similar to reinforcement conditions, response rate was observed to decline for 2 Ss. All 3 Ss manifested more forceful responding in extinction than during reinforcement. When extinction conditions were made more similar to reinforcement conditions, response rate did not decline and force emission became less variable. (9 refs.) - *Journal abstract.*

Department of Psychology
Denison University
Granville, Ohio 43023

1399 SHEARS, LOYDA M., & BEHRENS, MAURINE G. Effect of intelligence on payoff demands in a competitive negotiable tetrad game. *American Journal of Mental Deficiency*, 73(3): 514-519, 1968.

This study measures the effects of IQ on use of power in a negotiable essential tetrad (4-person) game. Third-grade boys were classified as high, middle, or low IQ. Six tetrads at each level played the experimental game in which Ss were assigned unequal bargaining power. Only the high and middle IQ Ss used the high power weight "4" to try to get greater payoff. A concept of rule codification based on Piaget's and Kohlberg's moral judgment theories was suggested as a theoretical explanation which unifies relevant social, perceptual, and experiential variables to account for boys' behavior in social situations. (10 refs.) - *Journal abstract.*

Pacific State Hospital
P. O. Box 100
Pomona, California

1400 BARRON, ROBERT FRANCIS. Transfer of the partial reinforcement extinction effect across tasks in normal and retarded boys. *Dissertation Abstracts*, 27(11,B):4118, 1967.

Normal and EMR boys, who were administered the Minnesota Rate of Manipulation Test modified so that intermittent reward could be given at the midpoint to 1/2 the group and continuous reward to all Ss at the final segment, did not increase performance speed following nonreward as predicted. On the Seguin Form Board, the normal and EMR boys who had been "frustrated" on the first task by nonreward performed a greater number of times with nonreward than the boys who received continuous reward on the first task. The MRs and normals were equally persistent; however, the MRs performed at a significantly slower speed than did the normals. The results suggest the use of caution in generalizing from Amsel's theory regarding frustration effect. (No refs.) - *A. Huffer.*

No address

1401 LOBB, HAROLD. Trace GSR conditioning with Benzedrine^{R} in mentally defective and normal adults. *American Journal of Mental Deficiency*, 73(2):239-246, 1968.

Classical galvanic skin response conditioning as a function of interstimulus trace interval was investigated with 160 mentally defective and 160 normal Ss. A moderate dose of amphetamine sulfate was given to 1/2 of the groups before the acquisition session. Extinction trials occurred next day. Conditioning was superior in normal groups during acquisition with interstimulus intervals up to 1.00 seconds. However, corresponding mentally defective groups receiving no drug displayed overnight increment and greater resistance to extinction. The drug tended to suppress at least the manifestation of conditioning, especially in retardates, but did not affect unconditioned GSRs to tone or electric shock. (16 refs.) - *Journal abstract.*

Department of Psychology
Middlesex College
University of Western Ontario
London, Ontario, Canada

1402 CLAUSEN, JOHS., & KARRER, RATHE. Orienting response-frequency of occurrence and relationship to other autonomic variables. *American Journal of Mental Deficiency*, 73(3): 455-464, 1968.

Several aspects of the orienting response (OR) have been investigated, particularly its occurrence in mentally defective Ss. On the first day normal Ss had more ORs than organic and non-organic defectives and more finger blood volume responses than the organics. On the second day these differences disappeared. The groups showed no difference with respect to habituation, and a novel stimulus failed to recover the ORs. Differentiation of the groups was more conspicuous on the first recording day. The data support earlier reports of impaired ORs in defectives, and suggest temporary disorganization in terms of an alarm reaction to unfamiliar or unexpected stimuli. (14 refs.) - *Journal abstract.*

Institute for Basic Research
in Mental Retardation
1050 Forest Hill Road
Staten Island, New York 10314

1403 MATHENY, ADAM P., JR. Reactive inhibition as related to the mental retardate's distractibility. *American Journal of Mental Deficiency*, 73(2):257-261, 1968.

This study tested aspects of the hypothesis that the retardate's distractibility disinhibits the buildup of reactive inhibition on the pursuit-rotor task. Mildly retarded children were divided into 2 groups on the basis of Digit Span (DS) scores. Twenty retardates with DS scaled scores equivalent

to their IQ constituted a non-distractible group. The distractible group had DS scores at least 2 scaled-score equivalents below their IQ. The distractible group showed a lower pursuit-rotor acquisition rate and less reminiscence effect. The findings suggest that distractibility is related to reactive inhibition. These findings can also be interpreted on the basis of arousal theory. (13 refs.) - *Journal abstract.*

Department of Pediatrics
University of Louisville
Medical School
Louisville, Kentucky 40202

1404 BECHTOLD, MARY LEE. IQ: Sacred cow or demon. *School and Community*, 54(2):15, 1967.

IQ scores cannot be considered unquestionably accurate and conclusive in predicting an individual's ability. Group intelligence tests (Otis, Kuhlman Anderson) indicate lower scores (10-25 points) than individual intelligence tests (Stanford-Binet, WISC). Children who are aware that they are being classified as "average" and "low-average" are less easily motivated to achieve maximum performance. Creativity disputes the accuracy of IQ tests: children who score in the top 20% in creativity tests do not necessarily have correlating IQ scores. IQ does not remain stable, and when test results are used to evaluate and classify students, all scores--achievement tests, individual intelligence tests, and group intelligence tests--should be considered. (No refs.) - *J. P. West.*

Kansas City Public Schools
Kansas City, Kansas

1405 MARTINEZ, SONIA JUDITH. Uso de las pruebas de inteligencia (Use of intelligence tests). *Boletin Informativo del Instituto Neurologico de Guatemala*, March(21):1-2, 1968.

Intelligence tests were initially used to study the differences between individuals and later to evaluate ability to fill an occupation. The concept of intelligence testing has varied considerably since first introduced by Binet and Spearman; however, most intelligence tests are used to objectively measure the psychological and behavioral aspects of the personality. Intelligence tests give numerical data but do not measure the effects of disadvantaged environments upon the individual, a serious defect in these tests. Tests have now been developed that measure a number of different aspects of development and maturation and can be used in infants below the age of 3, although these latter tests determine only the functional level of achievement, not actual intelligence. Over the age of 3, there are as many tests available as there are dimensions to be measured. It is hoped to extend intelligence testing throughout Guatemala in the future. (2 refs.) - *K. Drosman.*

No address

1406 ATZESBERGER, MICHAEL. Erfahrungen bei psychodiagnostischer Mithilfe in einer Lebenshilfe-Bildungsstatte (Experiences during psychodiagnostic work at a Lebenshilfe education center). *Lebenshilfe*, 5(4):189-193, 1967.

Apart from special tests, such as behavior, performance, development, and intelligence tests, other more general considerations can give useful information about the development of MR children. Parents alone cannot cope with an MR child; they require early counsel and help in understanding and promoting their child's development. A thorough examination must be undertaken by a team consisting of a psychologist, pedagogue, and physician to determine the child's potential and the best course to be pursued for maximum development. In addition to parental support in correcting speech defects, the child may be sent to a special school or spastic center. Group size will depend upon the relative independence and manual dexterity of the MR children. Development of clear behavior and performance patterns and adjustment capabilities are important. (5 refs.) - *S. P. Glinsky, Jr.*

Friedrich-Ebertstrasse 2
Niederlahnstein, West Germany

1407 RELKE, W. Die "Psychoaudiologische Diagnostik" als eine der Voraussetzungen fur die Rehabilitation Horgeschadigter (The "psycho-audiometric test" as a predictor of hearing disability rehabilitation). *Die Rehabilitation*, 7(4):173-178, 1968.

In order to differentiate between MR and hearing disability and to predict rehabilitation, a new testing method using both intelligence and hearing tests plus behavior observation

has been devised. The use of this "psycho-audiometric" test should allow better programing of educational and vocational classes for this group of patients. (15 refs.)
M. Drosman.

Klinik der Medizinischen
Akademie Erfurt
Nordhauser Strasse 74
x 50 Erfurt, East Germany

1408 DINGMAN, HARVEY F. Psychological test patterns in Down's syndrome. In: Vandenberg, Steven G., ed. *Progress in Human Behavior Genetics: Recent Reports on Genetic Syndromes, Twin Studies, and Statistical Advances.* Baltimore, Maryland, Johns Hopkins Press, 1968, Chapter 3, p. 19-25.

The psychological patterns in Down's syndrome children were examined with a 4-ability factor (linguistic, hand-eye psychomotor coordination, perceptual speed, and figural reasoning) test described in a previous paper; comparisons with children suffering from MR associated with disorders other than Down's syndrome demonstrated that there was no significant difference between Ss with Down's syndrome and other MR patients. The linguistic ability of mongoloids appears to be correlated with total height, perhaps indicating some general developmental factor which needs further investigation. The behavior correlates of mongolism, therefore, seem to be similar to the behavior of other MRs; no genetic basis can be pinpointed. (11 refs.)
K. Drosman.

1409 ROSEN, MARVIN, STALLINGS, LINDA, FLOOR, LUCRETIA, & NOWAKIWSKA, MYRA. Reliability and stability of Wechsler IQ scores for institutionalized mental subnormals. *American Journal of Mental Deficiency,* 73(2): 218-225, 1968.

Test-retest reliabilities of the WAIS and WISC with an institutionalized mentally subnormal population compared favorably with split-half reliabilities reported in the test manuals for the normal standardization sample. The WAIS was more reliable over time than the WISC. In general, reliabilities of the individual subtests held up well, although specific subtests of the WISC were relatively unreliable. There was a strong tendency for adult IQs to increase when change did occur over time. This was primarily due to an increment in performance IQ which occurred most frequently in persons of indigent status living in the institution for longer than 5 years. (31 refs.) - *Journal abstract.*

Elwyn Institute
Elwyn, Pennsylvania 19063

1410 KAUFMAN, HARVEY I., & IVANOFF, JOHN M. Evaluating the mentally retarded with the Peabody Picture Vocabulary Test. *American Journal of Mental Deficiency,* 73(3): 396-398, 1968.

The purpose of the study was to investigate the practicality of using the Peabody Picture Vocabulary Test (PPVT) in a rehabilitation center with MR clients. In comparing the PPVT with the Wechsler Adult Intelligence Scale (WAIS) and the reading section of the Wide Range Achievement Test (WRAT), the investigators concluded that although the PPVT may provide an adequate screening instrument with some populations, in working with the MR, the reading section on the WRAT may more nearly measure functional ability comparable to the WAIS full scale IQ score. However, where the PPVT is used with the MR, it is suggested that PPVT MAs be substituted for PPVT IQ scores. (7 refs.) - *Journal abstract.*

Department of Education
Marquette University
Milwaukee, Wisconsin

1411 McARTHUR, CHARLES R., & WAKEFIELD, HOMER E. Validation of the PPVT with the Stanford-Binet-LM and the WISC on educable mental retardates. *American Journal of Mental Deficiency,* 73(3):465-467, 1968.

Correlation coefficients based on MAs and IQs were obtained between the PPVT-A and either the Stanford-Binet-LM or the Wechsler Intelligence Scale for Children from a sample of educable MRs. While the correlations based on MAs were somewhat higher than those based on IQs, the discrepancy was not as great as that suggested by Rice and Brown (1967). An examination of their study indicated that their procedure would tend to yield a lower correlation coefficient. (6 refs.) - *Journal abstract.*

Memphis City Schools
Memphis, Tennessee 38112

1412 RAPIN, I., SCAROLA, L. M., & COSTA, L. D. The Purdue Pegboard as a screening test for brain damage and mental retardation in nonverbal children. *Volta Review*, 64(10): 635-638, 1967.

The Purdue Pegboard Test, which can be administered in 5 minutes, was most effective in detecting brain damage when either sensory-motor impairment or MR was also present. On the basis of neurological, psychological, psychiatric, and audiological examinations, 74 Ss (CA 6-13) were assigned to criterion groups: (1) uncomplicated hearing loss; (2) peripheral hearing loss plus "central auditory disorder"; (3) hearing loss plus "possible brain damage" plus "central auditory disorder"; (4) hearing loss plus "central auditory disorder" plus "probable brain damage"; and (5) brain damage with or without hearing loss. Abnormal scores on the Purdue Pegboard Test were obtained by 41% of the Ss in groups 4 and 5. Only 1 S without definite evidence of brain damage (group 2) obtained an abnormal score. There was a significant difference ($p<.01$) between the mean IQ (93) of Ss with normal scores and Ss with abnormal scores (mean IQ 73). The Purdue Pegboard Test appears to be a quick and useful screening device with nonverbal Ss to indicate the need for further diagnostic evaluation. (5 refs.) - *A. W. Jordan.*

Albert Einstein College
of Medicine
New York, New York

1413 GOETZINGER, CORNELIUS P., WILLS, ROBERT C., & DEKKER, LYNN CROUTER. Non-language IQ tests used with deaf pupils. *Volta Review*, 69(8):500-506, 1967.

Scores on the Terman Non-Language Multi-Mental Test, the 1938 Raven's Progressive Matrices, and the Chicago Non-Verbal Examination were as reliable for deaf as for hearing Ss; however, deaf Ss obtained IQs within the normal range on the Chicago while the same Ss were found to be 1 1/2-2 years retarded on the other 2 tests. Ninety-six deaf Ss (mean CA 13.65) were tested and retested 3 1/2 months later with these tests. High test-retest reliabilities were obtained for all 3 tests. Yet there was a significant ($p<.01$) increase in scores on all 3 tests at retest, and the amount of increase in IQ on the Chicago Non-Verbal Examination was significantly greater than the increase on the Terman and the Raven. The retardation on the Terman and the Raven could not be attributed to a language deficit, as measured by vocabulary and paragraph meaning, but appeared to be due to a lack of appropriate experiences. (31 refs.) - *A. W. Jordan.*

No address

1414 AMERICAN INSTITUTES FOR RESEARCH & JEWISH FOUNDATION FOR RETARDED CHILDREN. *Development of Basic Motor Abilities Tests for Retardates: A Feasibility Study (Final Report).* Elkin, Edwin H., & Friedman, Erwin. Washington, D. C. (JFRC Monograph No. 67-1, AIR-AOR-86-2/67-FR), 1967, 34 p. (Price unknown)

The results of a joint research project by the American Institutes for Research and the Jewish Foundation for Retarded Children, Inc. which was aimed at developing assessment tools to measure the motor performance of MRs suggest that modified forms of existing tests of basic motor abilities may be used to assess the MR's motor abilities. Test results may yield a developmental index of motor abilities which may eventually be used to assign MRs to skill training programs specifically designed for their underlying abilities. Modifications of 3 psychomotor and 5 physical proficiency tests which met criteria of availability of equipment, indoor testing, maximum safety, and ease of testing were administered to 30 male and 11 female MRs (CA range 8 to 24 yrs; IQ range 18 to 76). A rough screening cooperability device was used to select suitable Ss for the testing program. The modified tests included the Simple Visual Reaction Time Test; the Track Tracing Test; the Minnesota Manipulation Test; the Bend, Twist, and Touch Test of dynamic flexibility; the Twist and Touch Test of extent flexibility; the Hand Grip Test of static strength; the Standing Broad Jump Test of explosive strength; and the Rail Balance Test of gross body equilibrium. Differential test performance appeared to be affected by mongolism, sex, housing, age, drug usage, and IQ. These research findings are speculative because of the small number of Ss and the design of the study which did not permit the investigation of possible interaction effects among groupings. (33 refs.) - *J. K. Wyatt.*

TRAINING AND HABILITATION

Education

1415 GEARY, JIM. Administrative directions in school-work experience programs. In: Ayres, George E., ed. *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Mankato, Minnesota, Mankato State College, 1967, p. 25-28.

The present administrative organization of cooperative agreement school-work programs in Minnesota provides for a clear distinction between the responsibilities of vocational rehabilitation and those of the schools. Program aspects within the domain of vocational rehabilitation are the determination of eligibility, evaluation and assessment procedures, counseling, vocational training, work experience, job placement and follow-up, and authorization of funds. The schools are officially responsible for "housekeeping duties"; however, the schools actually function to provide communication on curriculum between the vocational adjustment coordinator and the classroom teacher and the coordination of the entire program with guidance counselors, principals, school social workers, nurses, and other school personnel. In order to achieve greater administrative efficiency, future program development should: provide for more delegation of technical functions to local school districts and do away with direct supervision by state and district offices of vocational rehabilitation; utilize local personnel who have been trained to do an effective job; include those children who are not within the specific domain of the public school; provide services for older retarded students; and provide services for all children who have a real discrepancy between their level of achievement and their tested potential. (No refs.) - *J. K. Wyatt.*

1416 TURNER, BETTY. The educable mentally retarded and the junior high school. *School and Community*, 54(3):34-35, 1967.

The EMR can benefit greatly from special education classes in public school systems; they should be provided with appropriate up-to-date classroom materials. In 1 junior high school the children that participated in the special class program demonstrated improvement in reading, writing, spelling, arithmetic, vocabulary, and word recognition. As more appropriate educational opportunities are offered the retarded, their chances to grow and develop to their maximum will be enhanced, they will be partially or totally financially self-sustaining, and they will be better able to make a worthwhile contribution in the community. Special education teachers in junior high schools find that working with these particular students is a most rewarding and challenging experience. (No refs.) *S. Half.*

No address

1417 PORTER, RUTHERFORD B. If not special class, what? *Training School Bulletin*, 65(3):87-88, 1968.

A plan is submitted for 1/2-time enrollment in a special class of MR which offers advantages both to students and to teachers. Students can be together for basic instruction, and with peers for personal and social adjustment. The teachers, in addition to special class instruction, can be available for resource help to other teachers and may work directly with some non-mentally retarded children who have learning problems. (No refs.) - *Journal abstract.*

Department of Special Education
Indiana State University
Terre Haute, Indiana

1418 POWLEDGE, FRED. *To Change A Child: A Report on the Institute for Developmental Studies*. Chicago, Illinois, Quadrangle Books, 1967, 111 p. $2.25.

The Institute for Developmental Studies affiliated with the New York School of Education was founded in 1958 and seeks to investigate the developmental, psychological, and social determinants of learning and intelligence

with emphasis on the role of environmental influences. Institute teachers work in a relatively advantageous setting with a small heterogeneous class and the aid of specialists, when needed, in addition to continuous supervision from a trained supervisor. The Institute works from the hypothesis that the "disadvantaged" child needs a special curriculum designed to build cognitive skills and improve linguistic and perceptual abilities. Further, development of learning proceeds from sensory-motor to perceptual to conceptual learning. This process must be considered vital by anyone attempting to start an intervention program. Step size, pacing, and feedback also must be considered. Intervention work is based on building up auditory discriminations that have been found lacking in lower class children. The belief in verbal communication as a means of coping with the slum child has been greatly supported. Telephones and tape recordings are used as auditory aids. Everything that occurs in the intervention classroom at the Institute is an ingredient in the "antidote for stimulus deprivation." Ideally, teacher sensitization is the first step toward setting up an intervention classroom, but sensitized teachers and revised curriculum are not enough--incorporating parents into the plans and activities is tantamount. A typical day in a classroom and a trip to a zoo are detailed and illustrated in a picture section covering the 38 pages in the center of the book. This book will be of great interest to researchers in the education field, teachers, and parents. (57 refs.) - *B. Parker.*

CONTENTS: The Institute for Developmental Studies, The Status Quo; The Most Promising Agency; Intervention; Changing the System; Deficits; Building a Curriculum; A Day in a Classroom; We're Going to the Zoo; Is it Sweet? In the Other Classrooms; Auditory Discriminations; Sensitizing the Teachers; The Zoo Trip; The Parents; and Does it Work.

1419 ST. CHRISTOPHER'S SCHOOL TEACHERS. *In Need of Special Care: A Venture in Curative Education.* Bristol, England, St. Christopher's School, 122 p. (Price unknown)

The main object of St. Christopher's School, Bristol, England, a Rudolph Steiner Curative School, is to help physically and/or mentally handicapped children to develop their powers so that they can find real work to do either in the community or in a sheltered situation. The essence of curative education is healing. The teacher identifies the specific deficiencies in each child and then attempts to overcome destruction and malformation. Some children benefit from special exercises, memory-training, rhythm learning, story-telling, music, drama, painting, crafts, concentration exercises, and/or training in spatial relationships. Curative eurythmy exercises are an indispensable part of the program and are developed for each child on the advice of a doctor. Eurythmy is based on human health principles and utilizes artistic forms and movements in ways that maximize their curative potency. Every tendency toward illness or abnormality can be counteracted by a form of movement. Individual speech treatment and intensive individual teaching practices are provided for children unable to participate in regular classroom life. The curriculum for older children includes training in practical work. The social adjustment, variety of interests, and initiative shown by many of the graduates of the school illustrate the value of this educational approach. Special education administrators and teachers interested in the curative education approach to the problem of handicapped children will find this book of interest. (1 ref.) - *J. K. Wyatt.*

CONTENTS: The Beginning; Types of Children; The Medical Approach; The Younger Children; The Class Teacher Period; The Older Children; Eurythmy; Painting; Drama; Music; Crafts; Religion; Hostel Life; Speech Difficulties; A Special Case of Individual Teaching; The Training Course; The Pupils' Training Course--The Last Venture; and The School Community.

1420 LORING, JAMES, ed. *Assessment of the Cerebral Palsied Child for Education.* London, England, The Spastics Society, 1968, 112 p. $1.80.

The educational prognosis of a handicapped child should not be determined on the basis of 1 assessment, but should be continually evaluated by assessment procedures which provide for discussions by professional teams and follow-up examinations. Decisions among several possible educational alternatives for CP children should be made by the children themselves or by their parents, but not by advisers. A child's educational prognosis depends on his situation and not on a specific handicap. School programs for handicapped children should provide special programs for each individual handicapped child. These programs should remain as close as possible to the program of the general educational system. Teaching resources for handicapped children will not be fully utilized until expert knowledge and organization which produce

better educational milieus and pupil motivation become available for application. The papers published in this book reflect the interdisciplinary views of participants in an international seminar convened by the Spastics Society at Oxford, England, in April 1967, and should be of interest to psychologists, pediatricians, educators, special educators, school administrators, and rehabilitation personnel. (105 refs.) - *J. K. Wyatt.*

CONTENTS: The Psychological Assessment of Pre-School Spastic Children (Gibbs); The Partially Hearing Spastic Child (Taylor); The Early Assessment of Visual Defects (Gardiner); Assessment of Intellectual Potential (Nielson); Methods and Materials for the Training of Severely Handicapped Children (Morgenstern); The Need for Continuous Assessment (Rabinowitz); Educational Implications of Psychopathology in Brain-Injured Children (Cruickshank); Testing as a Basis for Educational Therapy (Frostig); and Comprehensive Services for the Cerebral Palsied (Tizard).

1421 KIRK, WINIFRED D. Correlation between arithmetic achievement and performance on Piaget tasks. *Slow Learning Child,* 15(2): 89-101, 1968.

Twenty-three EMR children (MA range 6-11 to 9-11) were tested on the Stanford Achievement Arithmetic Test and 8 Piaget tasks. Performance on Piaget tasks and MA correlated equally well with arithmetic achievement. Piagetian tasks scores correlated more closely with arithmetic reasoning (.77) than with arithmetic computation (.60). Tasks which provided the highest multiple correlation with arithmetic reasoning involved conservation of area, ordination, and conservation of weight. Those which provided the highest multiple correlation with arithmetic computation involved conservation of length, ordination, and sets and subsets. When partial correlations were calculated the Piagetian tasks correlated much higher with MA than with CA. The MR children in this sample began to use concrete operations between 8 1/2 and 9 years (MA). (6 refs.) - *M. L. Wiltshire.*

No address

1422 GITTER, LENA L. Art and the Montessori approach in a poverty-stricken rural area. *Bulletin of Art Therapy,* 7(3):85-93, 1968.

The use of famous paintings was successful in reaching those in poverty-stricken rural areas of Mississippi; it brought a sense of pride and dignity to the area. In 1966, the Montessori philosophy was introduced in a model center to a group of teachers who would be serving the rural Negro. After demonstrating how to achieve order by limiting visual distractions, a place was prepared for a reproduction of a famous painting of the teacher-trainee's choosing. As the teachers began to appreciate art, they also began to express genuine appreciation for the children's art which, in turn, caused the children to respond with vivid and joyful pictures. For teacher training in similar areas, a mobile classroom, which would be a visual model of a preschool program, with materials, books, and art available on loan is suggested. (No refs.) - *G. M. Nunn.*

American Montessori Society
Washington, D. C.

1423 LINDSAY, ZAIDEE. *Art for Spastics.* New York, New York, Taplinger Publishing, 1966, 71 p. $4.95

Art activities for CP children can be used: to improve muscle coordination; to widen knowledge of shape, texture, size, distance, and color; and to provide a lifelong, stimulating, and creative leisure-time pursuit. Craft projects requiring the use of both hands will encourage hemiplegic children to use and value an often-ignored spastic hand. While spatial difficulties and physical handicaps limit the satisfaction which most CPs can derive from drawing and painting, information obtained from their drawings and paintings can be used to evaluate the limits of their environments and to identify other materials and creative experiences which may serve to increase their knowledge of the world. Since CP children are unable to move freely about their worlds, art instruction should aim at bringing the world to them. Projects which provide opportunities for building shapes and textures widen the world of CP children by allowing them to touch, manipulate, and understand things known by ordinary children. CP children can participate in the making of collages, modeling, printing, and fabric decoration based on straight-stitch sewing machine embroidery. Parents and teachers of CP children will find the non-technical explanations and numerous pupil illustrations in this book of interest. (No refs.) *J. K. Wyatt.*

CONTENTS: Cutting into Materials; Should Spastics Draw and Paint Pictures? Modelling; Space Filling with Various Materials; Space Filling by Printing; and Fabric and Its Decoration.

1424 BRACE, DAVID K. Physical education and recreation for mentally retarded pupils in public schools. *Mental Retardation (AAMD)*, 6(6):18-20, 1968.

A nationwide survey in 1966 resulting in 1,589 returned 4-page printed questionnaires sent to 4,022 school officials in public schools having MR pupils enrolled revealed that MR pupils received little or no special attention as to instruction in physical education and recreation. Of the primary schools reporting, 35% of all pupils received no physical education, and 20% of the elementary school pupils received no such instruction. Facilities are meager; a balanced program of physical education was not typical in the elementary or secondary schools. Much is to be desired in the way of health services, and more teachers of physical education with special preparation for teaching the MR are needed. (No refs.) - *Journal abstract.*

Department of Physical and
Health Education
University of Texas
Austin, Texas

1425 BRALEY, WILLIAM T., KONICKI, GERALDINE, & LEEDY, CATHERINE. *Daily Sensorimotor Training Activities*. Freeport, New York, Educational Activities, 1968, 197 p. $4.95.

A 34-week training program aimed at developing sensory acuity and motor skills in preschool children is described. The exercises and activities are designed to coordinate with the curriculum and equipment normally used with preschool children. A child physically ready to begin the first grade will be able to cope more easily with the academic work. (16-item bibliog.) - *K. B. Brown.*

CONTENTS: Body Image; Space and Direction; Balance; Basic Body Movement; Hearing Discrimination; Symmetrical Activities; Eye Hand Co-ordination; Eye Foot Co-ordination; Form Perception; Rhythm; Large Muscle; Fine Muscle; and Games.

1426 JONES, T. A. Physical education for the low ability groups. *Remedial Education*, 3(3/4):107-111, 1968.

For slow, low ability boys, maintaining interest in learning games and developing skills are attained by keeping the groups working on 1 activity for several weeks then changing to another. Although the time spent on a game or skill is limited and only minimal standards are attained, the aim is to give each pupil knowledge of the basic fundamentals and to maintain interest. While the "course system" was utilized with low ability boys within the normal secondary school system, the method can be adapted for the children in special schools. (No refs.) - *M. L. Wiltshire.*

Forest Hill School
London, England

1427 LIE, TRYGVE. Physical education and recreation for the mentally retarded in Norway. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 11-15.

The present balance between academic and physical education in special classes for MRs in Norway is not as good as it should be because of excessive emphasis on books written at abstract levels which frequently doom students to failure and unhappiness. A well balanced and stimulating program for MRs should provide increased physical activities and recreation education. Investigations of the leisure time activities of MRs have disclosed that a large number of them do not participate in either informal group activities or in organized activities provided by community recreation centers. MRs need carefully planned physical education training which takes their physical and health problems into consideration and provides training in community play and sports activities. (No refs.) - *J. K. Wyatt.*

1428 STEIN, JULIAN U. The importance of physical activity for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 16-20.

Physical education and recreation activities for MRs are potent learning devices which can promote better physical fitness, motor control, and physical proficiency; teach cause and effect relationships; stimulate cooperation and competition; act as stimuli for intellectual development; and promote feelings of importance. The core of behaviors that

MRs can develop through recreation education can help them explore their abilities; discover their likes; and develop feelings of pride, self-confidence, self-respect, and emotional satisfaction. Teachers, recreation workers, parents, or volunteers involved in physical education and recreation programs for MRs should develop specific goals, and plan and structure activities which will result in the achievement of desired outcomes. Activities which meet the specific needs of each individual should be selected. (No refs.) *J. K. Wyatt.*

1429 BOWERS, LOUIS. A program of developmental motor activities for retarded children. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 42-50.

The motor developmental approach to physical education aims at increasing the motor development of MR children by strengthening those blocks of motor performance which form the foundation of total neuromuscular performance. Each child's level of motor development is evaluated in coordination and in need of strengthening or integration. The program employs movement exploration, balance, airborn activities, hand-eye manipulation, and perceptual skill activities. These begin at the child's present level of functioning and gradually become more complex and difficult. They are directed toward the building of those neuromuscular patterns and reactions which are either inherent in or transferable to higher motor abilities. Teachers of developmental motor activities to MR children should interact with the children on a personal level, be prepared to demonstrate the activities, observe and evaluate the whole child, guide the children toward the most helpful activities, and provide generous amounts of encouragement and praise. (10-item bibliog.) - *J. K. Wyatt.*

1430 MEISGEIER, CHARLES. Physical education programs for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded.* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 56-59.

Physical education programs for MRs improve physical fitness and increase learning abilities; promote the development of coordinative abilities, sportsmanlike attitudes, and personal hygiene and grooming; and have a tremendous potential for the provision of the success experiences needed by MRs. Common elements in the goals of physical education and special education teachers include concern for the problems of the "whole child" and responsibility for meeting the needs of the child. Significant recent legislation administered by the U. S. Office of Education provides funds for program development, research, and teacher training, and is a potential source of funds for physical education programs for the MR. This legislation includes Title I and Title III of the ESEA, P. L. 89-313, Title XI of the NDEA, the Higher Education Act of 1965, P. L. 85-926, and P. L. 88-164. (No refs.) - *J. K. Wyatt.*

1431 GLENN, GALE L. The practicality of typewriting for educable mentally retarded high school students in Ventura, California. *Dissertation Abstracts,* 67(11,A): 3719-3720, 1967.

Forty weeks of typing instruction given to 11 randomly selected EMRs was effective in improving language arts abilities and in achieving vocational capability. Average typing speed was 30.4 net words/minute. The Ss showed significant improvement in spelling, composition, and handwriting speed when compared to a control group of 11 EMRs who had received no typing instructions. There was no appreciable improvement in handwriting legibility. Vocational capability was reached by 9 of 11 Ss given typing instruction. (No refs.) - *A. Huffer.*

No address

1432 WOODCOCK, RICHARD W. Forty-five ways to teach reading: A model for classifying reading approaches. *IMRID Papers and Reports*, 5(5):1-21, 1968.

Comparing and contrasting various approaches to initial reading instruction has been facilitated by the development of a model for classifying teaching approaches on the basis of sequence of gradation, degree of structure, and kind of symbol system. Sequence of gradation refers to a continuum ranging from a part-to-whole method, which introduces small units (letters) of reading material first and then progresses to larger units, to a whole-to-parts method which begins with large units of material such as stories or experience charts. The degree of structuring can vary from carefully outlined, predetermined steps in teaching, as in-programed instruction, to flexible approaches taking into account the child's interests and experiences. Variations in the type of symbol system can be described in terms of the degree of sound-to-symbol relationship. Approaches such as the i/t/a or UNIFON have a high sound-to-symbol relationship; whereas, the traditional orthography or non-alphabetic systems do not. This 3-dimensional model may be helpful in the design of studies comparing and contrasting methods of teaching reading and it may also assist teachers and supervisors in selecting methods and materials. (18 refs.) - *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1433 MERCER, CHARLES V. Cultural deprivation and reading achievement: A secondary analysis of the Cooperative Reading Project Data. *IMRID Papers and Reports*, 4(9): 1-32, 1967.

Objective measures of the economic, social, and educational environment in culturally deprived homes were not important factors affecting the reading achievement (RA) of first graders. The Peabody Cultural Opportunity Scale was administered to families of 493 Negro and white Ss (mean IQ 86.5) residing in low socioeconomic areas. Potential deprivation was analyzed in terms of the extent to which adequate role models (mother, father) were present; the educational level of household members; and the extent of stimulation in the home which was indirectly measured by income level. Most of the factors considered showed no significant relation to RA. There was a significant difference ($p<.05$) between the RA of Ss from homes with a father present and Ss from homes with no father or father figure. RA was directly proportional to the educational level of any household member. It appears that more subtle or subjective measures of attitudes and values would yield more meaningful information about the nature and effects of cultural deprivation. (11 refs.) *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tenneseee 37203

1434 HANLEY, RAY. A writing scheme for mildly and moderately retarded children. *Clearing House Journal*, Issue 7 (September): 16-20, 1967.

A method for training MR children to write their names in a recognizable manner omits prewriting exercises and substitutes exercises in writing the child's name in "follow the teacher" exercises. After ensuring that the child is able to carry out the basic operations of writing, he is provided with chalk and chalkboard and the teacher, using 1 letter at a time, spells out the child's name which he copies. Gradually he transfers to paper and pencils and continues to practice the same exercises. On the next step, the teacher prints the child's full name and he is encouraged to place the index finger before each letter so as to avoid omitting letters. When this can be performed unsupervised, the teacher proceeds to the next step with the oral command of "write your name." Neatness in writing comes with practice. Once the child can write on paper with 2-inch lines, he is given paper with guidelines variably spaced and practices until he can write reasonably well on regular paper. The final step is the introduction of cursive writing. (No refs.) - *M. L. Wiltshire.*

No address

1435 GREEN, FRED J. Guide lines: writing--cum--discipline. *Clearing House Journal*, Issue 7(September):21-24, 1967.

The relationship between learning to write and learning acceptable behavior is in the provision of guidelines for each. Specially designed writing pads with guidelines more clearly marked than in conventional writing pads have enabled a class of older MR boys

and girls to learn to write. While some teachers feel that the guidelines have a frustrating effect on the children, this has not been observed with the children in this group. Instead, the children were enthusiastic and took pride in their work. The guideline principle can also be applied more broadly for children need "guide lines" in all phases of their development. These guidelines should be established to help them develop behavioral patterns which are acceptable in the community in which they function. (No refs.) - *M. L. Wiltshire.*

Kewarra School for Sub-normal
Children
Mackay, Queensland
Australia

1436 SENGSTOCK, WAYNE L. Sex education for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 98-99.

Although MR youth require sex education, their parents frequently have difficulty providing it and need help in establishing sound, realistic attitudes toward sex relationships for themselves and for an MR youth; in channeling the natural drives of an MR youth into socially acceptable behaviors; and in making provision, where necessary, for the lifetime supervision of the sex relationships of an MR child. The contents of the Baltimore program of sex education for MRs includes information on biological, sociological, health, personal, and interpersonal aspects of sex; preparation for marriage, family life and child care; and values. Among the many objectives of this program are: the provision of adequate physical and physiological knowledge; the elimination of fear and worry; the achievement of a mature, balanced personality; and the provision of data which will prevent the exploitation of an MR youth and facilitate the understanding of moral values. (2 refs.) - *J. K. Wyatt.*

1437 PROJECT ON RECREATION AND FITNESS FOR THE MENTALLY RETARDED, & SEX INFORMATION AND EDUCATION COUNCIL OF THE UNITED STATES. *A Resource Guide in the Sex Education for the Mentally Retarded.* Washington, D. C., American Association for Health, Physical Education, and Recreation, (No date), 78 p.

Sex education that has been integrated with relevant aspects of the educational curriculum should be available to all MR children. The structuring of a sound and effective sex education program for MR children requires detailed and careful planning. Steps which may be followed in establishing a sex education program include selection of an advisory committee, selection of curriculum objectives, determination of the content of the curriculum, provision of in-service education for teachers, integration of sex education into the overall curriculum, endorsement of the school administration, experimentation with pilot classes, and the establishment of a permanent public relations program for patients. These guidelines focus on the areas of awareness of self, physical changes and understanding of self, peer relationships, and responsibility to society because of their importance for the healthy sexual maturation of MR children. The approach is developmental and both curriculum content and parallel sample activities are organized into sequential patterns which progress from basic and extremely simple activities to the very difficult and sophisticated patterns. The format may be modified to meet the functional level of the individual MR or of a group of MRs. Educators, special educators, parents of MRs, and volunteer personnel will find this book of interest. (No refs.) *J. K. Wyatt.*

1438 LOMBARDI, THOMAS P., & *POOLE, RONALD G. Utilization of videosonic equipment with mentally retarded. *Mental Retardation (AAMD)*, 6(5):7-9, 1968.

Arizona Children's Colony has successfully implemented a videosonic program to assist in the education of the MR. This program helps the MR individual to develop healthier concepts, aids in the maturation process, and is geared toward development of expressive and receptive language levels. A training workshop program has been organized for the benefit of staff members so they can effectively implement the videosonic equipment. (3 refs.) *S. Half.*

*Arizona Children's Colony
Coolidge, Arizona 85228

1439 ORLANDO, ROBERT, SCHOELKOPF, ANN M., & TOBIAS, LESTER. Tokens as reinforcers: Classroom applications by teachers of the retarded. *IMRID Papers and Reports*, 4(15):1-26, 1968.

Disruptive classroom behavior was eliminated and academic skills and socially acceptable behavior were increased in 6 classes of retardates ranging from preschool TMRs to a pre-discharge class of EMR adolescents. The modifications in behavior were effected solely by the classroom teacher. Teachers' descriptions and a trained observer's recorded transcript of techniques employed indicated success in eliminating such problem behaviors as nail-biting, thumb-sucking, stubborn and attention-seeking behavior, and hyperactivity. This was achieved by reward for the non-occurrence of the undesirable behavior as well as withholding of tokens following its occurrence. Once the disruptive behaviors were eliminated, it was possible to increase reading and arithmetic skills through the use of tokens. An exchange process served to establish the tokens as generalized reinforcers which could be used to purchase food, toys, clothing, grooming aids, or privileges. (19-item bibliog.) - *A. W. Jordan.*

George Peabody College
for Teachers
Nashville, Tennessee 37203

1440 HERK, IRENE. Developing a vocationally oriented curriculum for the mentally retarded in secondary schools. In: *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Ayers, George E., ed., Mankato, Minnesota, Mankota State College, 1967, p. 16-24.

The long-range objective of vocationally oriented curricula for EMR and TMR students should be to provide them with whatever they need to enable them to be employed and economically self-sufficient as adults. Although many school programs are designed for EMRs, there is a need for programs which will meet the total school needs of TMR students. Secondary curricula in Minnesota schools should be based on: primary programs which emphasize readiness and provide broad enrichment studies; intermediate programs which emphasize academic skills and provide programs in the tool subject areas of reading, writing, and arithmetic; and Junior High programs which have a prevocational emphasis, extend academic skills, and use a broad social studies program to provide an orientation to the world of work. Senior high programs should begin when students are 16 years of age, should have a vocational emphasis, and should be based on work-study opportunities. Secondary curricula should include occupational education, broad social studies, practical skills, driver training, and physical education. Job placement by the Vocational Adjustment Coordinator should be an integral part of the school curricula. (No refs.) - *J. K. Wyatt.*

1441 YOUNIE, WILLIAM J. Developing instructional materials for vocational education of the retarded. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 67-72.

Instructional materials developed for the vocational education of adolescent and young adult MRs should be designed to effect a specific goal, actively promote cooperation between agencies and services involved in the development of the vocational competence of MRs, be based on interdisciplinary ideas drawn from a wide variety of sources, reflect the philosophy, approach, and competency of the professionals using them, enhance the development of the self-concept, be based on the students' level of vocational development, shape vocational behavior in realistic ways, and be based on general material development principles. The proliferation of training programs, the increasing numbers of MRs receiving schooling at secondary school age, and the availability of government funds during the last 10 years have created quantitative and qualitative needs for instructional materials which are designed to prepare MRs for employment. The main problem inherent in the present lack of adequate instructional materials is the absence of clear development and evaluation criteria. (No refs.) *J. K. Wyatt.*

1442 McGETTIGAN, JAMES. Instructional materials development in public secondary school programs. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 86-91.

Descriptions of instructional materials designed for use with MRs should contain information on the target population, the recommended number of copies, whether the material is intended for stimulation or direct instruction, whether a book is based on fact or fancy, review materials, adjunctive film strips, and appropriate occupational information. The fundamental problems in the field of instructional materials are: the identification of instructional materials available for use in the classroom, and the demonstration and evaluation of the relative advantages of these materials by qualified persons. The uses and misuses of instructional materials can only be evaluated in a specific class with certain students and a given teacher in some psychological setting. Methods which may be utilized in the evaluation of instructional materials include evaluation by an experienced teacher and pupil assessment in conjunction with teacher guidance. Materials should not be a substitute for experience but should reflect experience and extend it. In order to develop criteria which may be used to judge material selection and fabrication and avoid social class biases and biases in commercial production, teachers need to be familiar with the backgrounds and experiences of their students. (5 refs.) - *J. K. Wyatt.*

1443 VILLAGRAN, RONALD O. El problema de los ninos repitentes (The problem of repeating students). *Boletin Informativo del Instituto Neurologico de Guatemala,* September-October (27):1-2, 1968.

In Guatemala there is a marked discrepancy between the number of school-age children and the number enrolled; this problem is compounded by the number of "drop-outs" and those called repeating students. There are 743,356 children between ages 7 and 14 in Guatemala, but only 309,108 are in school. Many more children start first grade than finish sixth; only about 10.6% actually complete all the primary grades and less than 10% complete high school. The causes which lead to school desertion and those causing repetition of grades are much the same and often involve the same children. These children are generally slow learners. Teachers complain of their inattention, misbehavior, hyperactivity, and lack of motivation and make them repeat grades. Parents often pressure these students for higher achievement; consequently, a reaction against school occurs and the student drops out as soon as possible. It is estimated that between 20 and 25% of the student population are slow learners in Guatemala and the Instituto Neurologica has recommended the creation of a National Counsel for Deficient Children to formulate methods of rescuing these children and making them more useful citizens. (2 refs.) *K. Drossman.*

No address

1444 GIEHR, ELISABETH. Heilpadagogische Betreuung antriebsschwacher Kinder (Remedial training of children lacking drive). *Lebenshilfe,* 5(4):180-186, 1966.

An understanding of the reasons behind lack of drive in MR children will help to indicate practical steps which can be used in promoting their drive and motivation. Lack of drive can arise from congenital lack of self-preservation instincts, accidents or operations, overly protective parental care, or a condition where undeveloped drives do exist but cannot be directed toward specific tasks. If motivation does not exist, it must be engendered by promotion of a pleasurable activity within the child's capabilities, enlarged upon, and then directed gradually to other activities. The use of rules, rhythm, melody, group activity, and defensive instincts will aid habit formation. (No refs.) - *S. P. Glinsky, Jr.*

Kreisausschuss Erziehungsberatung
Weilburg, West Germany

1445 BENYON, SHEILA DORAN. *Intensive Programming for Slow Learners.* Columbus, Ohio, Charles E. Merrill, 1968, 116 p. $2.25.

Participation in a 6-week intensive program of readiness training resulted in immediate and lasting gains for a group of seven 6- to 8-year-old slow learners. All Ss were unable to adjust to the academic demands of a normal classroom and could not read, write, or do arithmetic. They were deficient in speech and language, had discipline and emotional problems, and had difficulty following simple

directions. The program emphasized the development of body image, awareness of position in space, form constancy, and sensory integration. Training procedures were based on clinical techniques which were developed at the Achievement Center for Children, Houston, Texas for children with learning disorders. Case studies of each child consisted of: background information; an initial evaluation; information on behavior; and evaluations of speech, language, perceptual, motor, and aquatic abilities. This information was used to provide a systematic and diagnostic approach for teaching. Training was aimed at the development of generalization, and speech and language, perceptual-motor, gross motor, and aquatic activities were integrated to facilitate this development. The program did not include academic information, treatment for specific defects or remedial work for academic skills. This type of program is appropriate when a child with a learning disorder requires training in order to adapt to a more conventional program, or when adaptation to a conventional program needs to be maintained in conjunction with specific treatment. The program presented in this book should be of interest to teachers, speech therapists, physical educators, and psychologists. (12 refs.) - *J. K. Wyatt.*

CONTENTS: The Program; The Children; The Activities; and The Results.

1446 MULLER, KLAUS-DIETER. Einige psychohygienische Erwagungen zur Arbeit in der Sonderschule fur Lernbehinderte (Some mental hygiene considerations on work in the special school for retardates). *Zeitschrift fur Heilpadagogik,* 18(9):504-508, 1967.

Positive and negative school experiences remembered by normal children indicate measures for promoting mental hygiene and learning among MR children. Mental hygiene now concentrates increasingly upon developing positive mental health in addition to combating aberrations. Positive experiences of normal school children include group projects, class hikes and trips, and celebrations. Negative experiences are fear of individual teachers, certain pupils, tests, failing, and negative home reactions to poor work. Therefore, special school programs should promote: a positive and constructive social relationship with other children; a recognition of adult authority based on security, identification, and freedom from fear; and a healthy self-confidence. (7 refs.) - *S. P. Glinsky, Jr.*

Padagogischen Hochschule Hannover
Stuevestrasse 18
3 Hannover-Sued, West Germany

1447 NISHIMURA, SHOJI, & TAKAHASHI, AHIHIKO. The treatment of mentally retarded children: A methodological study of the "Heilpadagogik" for severely retarded with behavior problems. *Japanese Journal of Child Psychiatry,* 9(2):113-129, 1968.

Therapeutic experiences--occupational therapy and self-care training--were beneficial for SMR adolescents and young adults who had serious emotional and behavior problems. The conditions for establishing the therapeutic setting were avoiding external stimuli, providing situational physical and dynamic surroundings, structuring the situation, using the teacher in a therapeutic relationship, allowing flexibility in programing as the child's attitude changes, and inducing spontaneity. The therapeutic situation progresses in 4 stages from highly structured situations in an isolated environment to loosely structured settings with group experiences. Twelve of the 19 Ss who went through the therapeutic educational activity program showed improvement. (17 refs.) - *A. Huffer.*

No address

1448 BLUHM, DONNA L. *Teaching the Retarded Visually Handicapped: Indeed They Are Children.* Philadelphia, Pennsylvania, W. B. Saunders, 1968, 127 p. $4.50.

Significant educational programs for blind MR children should be based on individual teaching and on individual programs of instruction which are designed to embrace the individual aspects of each child. Curriculum objectives for blind, MR children should be: to teach the practical skills needed for success in a basically nonhandicapped society; to stimulate the development of maximum potential; to develop a high degree of independence; to develop the art of cooperative living; to develop feelings of self-respect, dignity, and pride; to develop self-control and self-expression; to provide educational experiences which will enhance the development of desirable attitudes and habits for an educational program, increase knowledge, and provide opportunities for increasing and improving skills; and to provide guidelines for parents and teachers which can be used to help the children to experience more purposeful and meaningful lives. Lack of visual stimulation contributes to the retardation factor in nonsighted MR children and usually causes them to function at a considerably lower level than their intellectual capacity indicates. In addition to the use of consistent methods and approaches, teaching techniques should stimulate auditory and tactile perception and

strive to enlarge the child's environment and learning potential by aiding the development of the other senses. The teaching methods presented in this study guide may be used with sighted and non-sighted slow learning EMR and TMR children and with normal blind children. This book should be of interest to educators, particularly special educators. (30 refs.) - *J. K. Wyatt.*

CONTENTS: Living Skills; Handwork; Learning Through Music; Reading Readiness; Recognition of the Braille Alphabet; Mathematics; Science; Social Studies; Self Expression and Creativity; Recreation; and Suggested Poetry and Songs.

1449 KERSHNER, JOHN R. Doman-Delacato's theory of neurological organization applied with retarded children. *Exceptional Children,* 34(6):441-450, 1968.

The effects of physical activities upon neurological organization (as related to the Doman-Delacato theory of neurological organization) were studied with 30 TMR children (16 control, 14 experimental; CA 8-18 yrs) from 2 public schools in Pennsylvania. One teacher and 1 aide administered the program for each group and pretests and posttests were given by evaluators from the Pennsylvania Department of Public Instruction. The E group schedule was set up according to the Doman-Delacato theory of neurological organization; the C group physical activities were structured to give them about the same amount of attention as the E group. The schedule was for 5 days/week for 74 consecutive teaching days. The testing instruments were: the Creeping and Crawling Scale, adapted from the Doman-Delacato Developmental Profile; the Kershner-Dusewicz-Kershner Adaptation of the Vineland-Oseretsky Motor Development Tests; and the Peabody Picture Vocabulary Test (PPVT). The Doman-Delacato theoretical position on creeping and crawling and mean IQ improvement was supported by statistical tests with covariance used in analysis of PPVT scores to allow for pretest differences between the groups. The difference between groups was not statistically significant in analysis of motor proficiency improvement. However, both groups were noticeably improved especially the C group. It was found that creeping and crawling performance improves with participation in creeping and crawling activities but that mastering these primary perceptual motor skills may not be a necessary prelude to improvement in more advanced skills. Application of the findings in this study are limited by the small sample, non-random selection and non-random assignment to a group, difference in teaching methods and teacher attitudes between groups, and lack of specific descriptions of the groups. (34 refs.) - *E. F. MacGregor.*

No address

1450 PICQ, LOUIS, & VAYER, PIERRE. *Education Psycho-motrice and Arrieration Mentale: Application Aux Differents Types D'Inadaptations* (Psychomotor education and mental retardation: Application to the different types of disorders). Third edition. Paris, France, Editions Doin-Deren, 1968, 284 p. (Price unknown)

Unadapted and/or MR infants and children should have psychomotor education. The description of the precise plan of psychomotor education may be helpful to physicians, nurses, psychologists, and educators. Retarded children need to be helped with psychomotor exercises in order to reach normal levels of coordination, equilibrium, oculo-manual control, perception, expression, and reduce paratonia and synkinesia. The specific exercise plan follows a logical sequence of development and is preparatory and prerequisite for higher levels of learning and social comportment. A well equipped room and numerous specific exercises are designed to aid in the development of children (CA 2 to 11 yrs) who are grouped in terms of mental and/or physical handicap. Although the children were heterogeneous they exhibited similar dysfunctions; the exercises were developed to concentrate specifically on those disorders. Class periods were 30 to 45 minutes, twice each week, with home exercise assignments. Mental levels were profiled before and after the exercise program. Exacting measurements were impossible to obtain, but each of the 29 children either made discernible advances or did not regress as much as would be expected of that child. Psychomotor education should be used for the optimum development in MRs. (89-item bibliog.) *M. T. Lender.*

CONTENTS: Motor and Psychism; Motor and Psychomotor Education; Practical Application; and Tests-Balance Sheet Results.

1451 ARENA, JOHN I., ed. *Teaching Educationally Handicapped Children.* San Rafael, California, Academic Therapy Publications, 1967, 101 p. $2.95.

Children with minimal neurological or brain dysfunction and normal intelligence who have

learning, perceptual, and/or behavior disorders are often educationally handicapped and require special teaching methods. Pupil assessment, observation, and counseling procedures should be used to identify the children's strengths and weaknesses and to help them understand their need for special training. Special training methods can be used to teach educationally handicapped children to relax, concentrate, recognize patterns, understand space relations, improve visual and verbal memory, understand form, and/or correct left-to-right reversals in reading and writing. Curricula may be adapted to facilitate the teaching of English and mathematics. Art, music, and color can aid the development of reading and language abilities. A behavior change model (which emphasizes the importance of teacher-student relationships, the development of self-esteem, and the interdependent relationship between increased self-esteem and positive academic and social behavior change) has been successfully used to modify learning and behavior disorders.Classroom teachers can use reinforcement therapy to effect behavior change. The papers in the special collection were presented at the Good Teaching Practices Conference for Teachers of Educationally Handicapped Children held at Orinda, California, and should be of interest to educators, special educators, and psychologists. (74 refs.) - *J. K. Wyatt.*

CONTENTS: Identifying the Children; Motor Development; Basic Considerations; Adapting the Curriculum--Language; Adapting the Curriculum --Mathematics; and Behavior Change.

1452 STEVENS, MILDRED. *Observing Children Who Are Severely Subnormal.* London, England, Edward Arnold, 1968, 94 p. $5.50.

Teachers of SMR children can use recorded observation procedures to diagnose individual needs, identify optimal teaching methods, check progress and development, and make decisions about needs for extra expert assistance. Record-keeping should be encouraged by head teachers. Schools may need to provide training opportunities so that teachers can learn to become skillful observers. Cumulative record cards can include data provided by the doctor, psychologist, social worker, and mental welfare officer as well as a daily record of teacher's observations. These cards will gradually provide extensive information about a child over a period of years. This information can be used to acquaint new teachers with a child's history thus enabling them to make appropriate provision for the child's development and education. Observation record-keeping procedures should help a teacher discover the qualities of an SMR child which are common to all children and identify the types of stimulating, permissive, and well planned conditions that will enhance their emergence and development. This book should be of interest to special educators. (16 refs.) - *J. K. Wyatt.*

CONTENTS: Introduction: Why Observe? Observing and Responding; Methods of Observation. When and How; Where to Observe the Young Severely Subnormal Child; Where to Observe the Older Severely Subnormal Child; Special Situations and Observing; Individual Teaching and Observing; Keeping Records; Role of the Head Teacher in Encouraging Record-Keeping Habits; A System of Cumulative Record Cards; and Concluding Remarks.

1453 ISRAEL, JACK W. Evaluating teaching skills in working with the slow learner. *School and Community,* 54(3):7, 1967.

Evaluation of teaching techniques and programs for slow learners must be provided continually and consistently and corrections made systematically. A questionnaire (useful for in-service training of teachers) developed to achieve this end is presented, and subjects included are: attention span; pace (expected performance level); motivation; discipline; teaching style; homework; and testing and grading. (No refs.) - *J. P. West.*

Springfield Public Schools
Springfield, Missouri

1454 U. S. DEPENDENTS SCHOOLS, EUROPEAN AREA *Education and Training: Directory of Special Education Classes CONUS and Overseas.* USDESEA Pamphlet No. 350-622, April, 1968, 75 p.

The directory lists the number (when known) and location of special education classes which are located on or within 30 miles of most United States military installations in the continental United States, Alaska, Hawaii Canal Zone, and the Atlantic, Pacific, and European Areas. The listing includes classes for EMR, TMR, blind, deaf, orthopedically handicapped, neurologically handicapped, emotionally disturbed and speech therapy. (No refs.) - *A. Clevenger.*

Vocational Habilitation--Rehabilitation

1455 LEVINE, SAMUEL, & ELZEY, FREEMAN F. Factor analysis of the San Francisco Vocational Competency Scale. *American Journal of Mental Deficiency*, 73(3):509-513, 1968.

Principal-axes and Varimax orthogonal rotation solutions were performed on the vocational competency ratings of MR adult males and females. No differences in the pattern of factor loadings were found between the sexes. Based on the principal axes solution, a single vocational competency score can be used to represent the test. The rotated solution yielded 4 factors: cognitive competence, cognitive and interpersonal flexibility, cognitive-motor ability, and initiative-dependability. (11 refs.) - *Journal abstract.*

San Francisco State College
San Francisco, California 94132

1456 PAYNE, JAMES S., & CHAFFIN, JERRY D. Developing employer relations in a work study program for the educable mentally retarded. *Education and Training of the Mentally Retarded*, 3(3):127-133, 1968.

Sound relationships with community employers are basic to vocational training programs for MRs. Advertising often presents the MR as a stable or competent employee who takes pride in his work; however, few MRs can attain this ideal level. The meaning of the term "mentally retarded" is confused and often the general public thinks in terms of emotional difficulties or delinquency. Honesty in presenting the employee to the employer is essential and can be accomplished by describing the limitations without the actual label of MR. Employer interest is elicited on the basis of teamwork in helping the MR train. The importance of the employer's role in giving frequent compliments on any improvement noted in the employee should be emphasized. Weekly visits to the employer by a counselor are maintained and the employer is encouraged to ask help at any time. (4 refs.) *M. L. Wiltshire.*

Kansas Public Schools
Kansas City, Kansas

1457 CHAFFIN, JERRY D., SMITH, JAMES O., & HARING, NORRIS G. *A Selected Demonstration for the Vocational Training of Mentally Retarded Youth in Public High Schools.* Final report RD 1548. Kansas City, Kansas, University of Kansas Medical Center, 1967, 67 p.

The results of the Kansas work-study program, a 3-year demonstration project, indicate that a work-study method of vocational rehabilitation can be used successfully with high school age EMRs. Ninety-one MR Ss with low intelligence (IQ range 45-80), but who were considered to have the possibility of achieving social and occupational competence after training, participated in a series of community work samples, a training program and a placement program. The community work samples took place in the sophomore year and provided descriptive information on vocational abilities which was used to evaluate the Ss and to identify their training and placement needs. Both on-the-job and classroom training were provided, and Ss began to work full time in the competitive labor market during the last semester of their senior year. Post-school counseling, training, and placement services were available for all project Ss. Twenty percent of the project Ss dropped from school. Ninety-one percent of those who graduated from the program were employed on either a full-time or part-time basis. This represents a gain of 20 to 30% since 60 to 70% of a control group population became employed without participating in the work-study program. The program succeeded in preparing a number of Ss with extreme vocational limitations (low IQ and/or "brain damage" and/or extreme behavior disorders) for gainful employment. (6 refs.) - *J. K. Wyatt.*

1458 WINER, ARNOLD J. Inter-agency cooperation in action. *Mental Retardation (Canadian ARC)*, 18(2):12-14, 1968.

The Montreal Association for Retarded Children (MARC) and the Jewish Vocational Service Work Adjustment Training Center have cooperated in vocational training and placement of the MR. MARC's adult training program offers continuous employment experience to retarded adults, while the Jewish Vocational Service trains the handicapped for competitive employment. Often an MR in a sheltered workshop program will show that he can succeed in the competitive labor market, but no access

to industrial opportunities is available. Thus a Work Adjustment Training Program can aid such persons by helping them adjust to and contact industry. Very often, an individual MR or handicapped person cannot function in competition with less handicapped people and will need a sheltered workshop approach such as is provided by MARC's adult training center. Two case studies are given to illustrate the actual cooperative effort of these 2 organizations. (No refs.) - *S. Half.*

Jewish Vocational Service
Montreal, Ontario, Canada

1459 CAMPBELL, W. J. The habilitation of the post-school group. *Clearing House Journal,* 8(March):5-18, 1968.

Moderately retarded and trainable MRs need a sheltered environment both in workshops and in living arrangements with the leadership of understanding, "nurturant" persons. Activities should be varied, stimulating, and creative. The leadership should be alert to opportunities for the MR to experience success and to develop a sense of self-respect; the leaders should know how to teach skills which require long and patient practice. Groups should be kept small as the individual gains more from participation and the satisfaction of accomplishment in a small group than in a large group. (No refs.) - *M. L. Wiltshire.*

Faculty of Education
University of Queensland
Brisbane, Australia

1460 HOWE, CLIFFORD E. Is off campus work placement necessary for all educable mentally retarded? *Exceptional Children,* 35(3):323-326, 1968.

A research project by the Division of Special Education in Iowa City (Iowa) to determine how the public school system can best prepare EMRs to become productive adult citizens compared the postschool adjustment of students having off-campus work experience with a group limited to the school setting. Personal interviews were conducted with both groups and a 5-point rating scale was developed as well as a computer program to calculate scores. The main analysis was by chi square for the comparison of overall ratings of adjustment. Extensive follow-up was done and it was found that not all the individuals involved in high school work-study programs need off-campus placement as an integral part of their program. A suggestion was made that the work-study coordinator spend more time in the areas of placement and supervision of on-campus students especially those with a lower potential, in order that they might find appropriate employment following their school careers. A need for additional longitudinal research in other areas of the United States is indicated. (3 refs.) *S. Half.*

College of Education
University of Iowa
Iowa City, Iowa 52240

1461 CACCIATORE, ALFONSO. Why slow learners need vocational training. *Catholic School Journal,* 671(6):57-58, 1967.

In determining the educational and other needs of the slow-learning pupil, teachers must understand that slow learners differ from the average child only in degree; that quality, not quantity, of learning is of greatest importance; and that the slow learner has an emotional, personal approach rather than the logical reasoning approach to life. A general education combined with suitable vocational training will best fit the slow learner for a useful, satisfying place in society and he should be allowed to progress at his own pace through the required number of years in high school and should be trained over as long a period of time as necessary in some unskilled or semi-skilled vocation which fits his abilities. Given sufficient learning time the slow learner will eventually understand most of the things normal learners know; however, teachers must provide encouragement, affectionate support, and should teach good work habits and attitudes. (No refs.) - *E. F. MacGregor.*

Senaca Vocational High School
Buffalo, New York

1462 WILKIE, EARL A., KIVITZ, MARVIN S., CLARK, GERALD R., BYER, MARILYN J., & COHEN, JULIUS S. Developing a comprehensive rehabilitation program within an institutional setting. *Mental Retardation (AAMD),* 6(5): 35-39, 1968.

Elwyn Institute has developed a comprehensive successful rehabilitation program which incorporates a philosophy of assistance for each resident in achieving his maximum potential. The program was developed after a

survey in which the residents were divided into 3 categories: the most capable group within the institution; the semi-dependent; and the totally dependent SMRs. In addition, 3 staff groups were provided with certain specifics and information for evaluation and study. Two primary goals were made for the residents: return to the community with adequate parental support or lifelong positions for those without support from their families. The Pennsylvania Bureau of Vocational Rehabilitation was most instrumental in the success of this program which includes coordination of services; cooperation of staff and residents; and intensive follow-up and evaluation of those MRs placed in the community. Coordinated programing consisted of occupational therapy, contract workshops, vocational training, adult education, personal adjustment training, work adjustment training, community adjustment program, remedial education, and placement with coordination of community resources. This program has permitted many MR adults to return to the community and to make a contribution to society. (4 refs.)
S. Half.

Elwyn Institute
Elwyn, Pennsylvania 19063

1463 AYERS, GEORGE E., ed. *New Directions in Habilitating the Mentally Retarded* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, 114 p. $2.50.

The process required for the habilitation of MRs and the development of their innate potentialities is dynamic and complex. The participation and cooperation of many professional specialties and rehabilitation agencies are required and the development and utilization of innovative techniques is imperative. In spite of significant advances during the last few years, a great deal still needs to be accomplished if the effectiveness of the habilitation process with the MR is to be maintained and increased. This collection of papers discussed pre-vocational evaluation, institutional vocational rehabilitation, the development of instructional materials for habilitation programs, and the inclusion of the socially deprived and social offenders in vocational rehabilitation programs. This book should be of interest to rehabilitation personnel, educators, special educators, social workers, and psychologists. (46 refs.)
J. K. Wyatt.

CONTENTS: Determination of the World of Work for the Mentally Retarded (Sutton); Success and Failures of the Mentally Retarded in a Pre-Vocational Program (Gorelick); The Retardate in the Community: A Post-Institutional Follow-Up Study (Rosen); Vocational Training Program in a Residential Treatment Center (Ferguson); Community-Oriented Rehabilitation Programs and Services for the Mentally Retarded (Fraenkel); The Establishment of a Vocational Rehabilitation Facility in a State Institution for the Mentally Retarded: Guests or Partners (Williams); Developing Instructional Materials for Vocational Education of the Retarded (Younie); Materials for Special Instruction in a Young Adjustment Center (MacLeech); Three Habilitation Approaches in A Cooperative School Sheltered Workshop Program (Bitter); Instructional Materials Development in Public Secondary School Programs (McGettigan); Instructional Materials Development in Sheltered Workshops (Lang); Vocational Rehabilitation of Social Offenders (Kreuter); and The Socially Deprived and Their Vocational Rehabilitation (Nardi).

1464 SUTTON, JACK. Determination of the world of work for the mentally retarded. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 1-20.

Vocational education training for junior high school and senior high school MRs should be based on a sequential plan which begins with a determination of a student's job readiness and ends with job placement and follow-up. The work readiness evaluation staff should consist of the director of special education, a vocational counselor, the school psychologist, the school psychometrist, special education teachers, and the placement director. Diagnostic testing should be used to arrive at an evaluation of each student and to design individual programs. Vocationally oriented curricula should emphasize social development and present meaningful information on the world of work. The job training sequence should begin with the introduction of minor work skills in a sheltered classroom situation. The next step may be placement in a sheltered on-campus job which involves at

least token payment for services rendered. Finally, trial and then regular job placement away from the school should be implemented. Facilities for school instruction should be equipped so that they can be used as both academic and work demonstration areas and opportunities for integration with the total school population should be provided. Counselor aides, student aides, parents, and school personnel could supplement the staff of an education training program for MRs. (No refs.) - *J. K. Wyatt.*

1465 WILLIAMS, NORWOOD L. The establishment of a vocational rehabilitation facility in a state institution for the mentally retarded: Guests or partners. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 59-66.

Since the beginning of the comprehensive Vocational Rehabilitation Program at Rosewood State Hospital, Maryland in 1965, 483 MRs have been accepted for services and 150 MRs have been successfully rehabilitated. Services are provided for program participants by a staff of 33 persons who operate as a team. The plan allows for a 2-month pre-vocational evaluation period, a 6-month vocational training and day-placement period, a 6-month community-placement period, and a 4-month follow-up period. Vocational training and day placement employment opportunities include work as a nurse's aide, work in the dietary department, the domestic arts unit, sewing, janitorial and maintenance areas, landscaping, general shop, shoe repair, upholstery, and hospital industries. Specialized services provided by the program include 2 rehabilitation houses, speech therapy, and psychiatric consultation. An Alumni Day which allows program graduates who have been successfully placed in the community to return to the institution to discuss common problems and share experiences is held every 6 months. A vocational rehabilitation program within a hospital setting is neither a guest nor a partner. It offers the most effective program and maximum services when it is a part of the hospital's "body program." (No refs.) *J. K. Wyatt.*

1466 BITTER, JAMES A. Three habilitation approaches in a cooperative school sheltered workshop program. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 80-85.

Innovative approaches in the habilitation of MR and handicapped youth in need of intensive vocational programing employed at the Work Experience Center, St. Louis, Missouri include: a short-term "job site" technique which evaluates functional ability and provides specific job and adjustment training; the use of a Work Adjustment Rating Scale to assess areas of vocational strengths and weaknesses; and the use of 8 mm film loops to provide a concrete orientation to abstract concepts. "Job site" assignments are arranged by the training counselor and vary from 1 to 3 weeks in length. The "job site" provides opportunities for direct, concrete experiences, comparative evaluation by an employer, participation in a wider range of jobs than are available at the workshop, evaluation of vocational adjustment, and specific job training which may lead to permanent placement. The Work Adjustment Rating Scale is being developed for the use of industrial supervisors participating in the habilitation program and provides data on the amount of supervision required, realism of job goals, teamwork, acceptance of rules and/or authority, tolerance for work, work perseverance, amount of assistance sought, and the value placed on job training. The 8 mm film loops were prepared from commercial film and allow for the reduction of a task to minute steps. They have a potential for use in counseling, work adjustment behavior instruction, and specific training in workshop tasks. (1 ref.) *J. K. Wyatt.*

1467 LANG, JERRY E. Instructional materials development in sheltered workshops. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 92-98.

The rapid expansion of the workshop movement has created a critical need for (1) research which will evaluate the effects of sheltered workshops on the skill, motivation, attitudes, and self image of their clientele, and (2)

the location and training of additional competent personnel. Sheltered workshops must also consider the use of effective and economical training methods, the assistance of organized labor and industry, and continued cooperation with professions and agencies concerned with rehabilitation. The Flame of Hope Candle was the first item produced by a National Association of Sheltered Workshops and Homebound Programs research and demonstration project. The purposes of this project were to determine whether or not MRs could manufacture quality merchandise, and to expand the employability of MRs by introducing them to jobs within the candle making and allied industries. The development of instructional materials for the staff of the project was a key factor in the successful completion of the project. The candles were produced in 12 workshops throughout the United States. More than 1/3 of the employees trained in the skills necessary for this project were employed during the first year. The gross earnings from the Candle Project in the first 8 months were in excess of $420,000. (No refs.) - *J. K. Wyatt.*

1468 NARDI, GABRIEL A. The socially deprived and their vocational rehabilitation. In: Ayers, George E., ed. *New Directions in Habilitating the Mentally Retarded.* (Proceedings of the Vocational Rehabilitation Subsection of the American Association on Mental Deficiency, held at Denver, Colorado, May 15-20, 1967.) Elwyn, Pennsylvania, Elwyn Institute, 1967, p. 110-114.

Solutions to the problems associated with the vocational rehabilitation of the socially deprived are complex and will require the realistic and coordinated effort of many agencies, consideration of environmental ecology, and the provision of cues within the environmental ecology which will prevent the propagation of the problems which perpetuate social deprivation. The medical model and its historical approach is not appropriate for vocational rehabilitation of the socially deprived. A vocational rehabilitation model should be concerned with environmental reality and with the identification of the responses made by individuals to the cues of that environment. After the cues which perpetuate deprivation have been identified, cues designed to effect behaviors, which are more readable to society in general and which can enable deprived individuals to become socially blendable, can be programed. (No refs.) - *J. K. Wyatt.*

1469 *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Ayers, George E., ed. Mankato, Minnesota, Mankato State College, 1967, 46 p. (Price unknown)

The process of habilitating MRs should begin early in life and continue throughout their entire life span. Services aimed at helping MRs develop their fullest physical, mental, social, educational, psychological, and vocational potential should be integrated so that they provide a well planned continuum of support. Agencies and professional specialists must participate and cooperate in order to provide these integrated services. Reports on statewide recommendations for MR habilitation from 14 states indicate that their most pressing needs are for manpower and education. Minnesota began its first cooperative public school-vocational rehabilitation program in 1964. This program is based on cooperative agreements between special education and vocational rehabilitation and aims at increasing the number of handicapped persons for whom vocational rehabilitation services can be provided and at providing work training experiences for students while they are in school. The papers included in this symposium are aimed at increasing interest in, and knowledge of, the organization, administration, and implementation of the Minnesota program and should be of interest to education and rehabilitation personnel. (No refs.) *J. K. Wyatt.*

CONTENTS: Contemporary Needs in Habilitating the Mentally Retarded (Humphrey); Cooperative Agreements Between Special Education and Vocational Rehabilitation in Minnesota (Spears); Developing a Vocationally Oriented Curriculum for the Mentally Retarded in Secondary Schools (Herk); Administrative Directions in School-Work Experience Programs (Geary); The Role of the Special Class Teacher in School-Work Experience Programs (Cole); The Role of the Vocational Adjustment Counselor in School-Work Experience Programs (Cole); and Contributions of Guidance Counselors to the Educational-Vocational Continuum (Spriggs).

1470 HUMPHREY, HUBERT H. (MRS.). Contemporary needs in habilitating the mentally retarded. In: *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Ayres, George E., ed. Mankato, Minnesota, Mankato State College, 1967, p. 3-7.

Preliminary reports on statewide recommendations for MR habilitation in California, the

District of Columbia, Georgia, Illinois, Iowa, Montana, North Carolina, New Hampshire, New York, Ohio, Oregon, Pennsylvania, Texas, and Wisconsin listed manpower and education as their most urgent needs. Eleven states recommended the review and possible revision of state laws pertaining to the MR. The majority of the legal and legislative recommendations were concerned with guardianship, financing, education, criminal responsibility, and the definition of MR. There was wide variance between states in planning and implementation suggestions, and in the size and style of planning reports. The President's Panel on MR appeared to have provided valuable direction and purpose to state planning efforts in that the states had drawn freely both from its statements on philosophy, goals and objectives, and from those of President Kennedy. The number of recommendations made by a state ranged from 50 to 250. The average number of recommendations was 116. The most important, single accomplishment of these state planning projects was the awakening of the states to an awareness that the MR can be helped. Those who work in the field of MR need to maintain communication among the wide variety of groups involved in work with MRs, and need to provide loving care for the individual human beings who are MR. (No refs.) - *J. K. Wyatt.*

1471 SPEARS, MARVIN O. Cooperative agreements between special education and vocational rehabilitation in Minnesota. In: *Symposium on Habilitating the Mentally Retarded,* held at Mankato State College, Mankato, Minnesota, February 11, 1967. Ayers, George E., ed., Mankato, Minnesota, Mankato State College, 1967, p. 8-15.

The 2 major objectives of the Minnesota plan for cooperative agreements between special education and vocational rehabilitation are to provide more vocational rehabilitation services to more handicapped persons, and to bridge the gap between school and work by providing on-the-job training for persons still in school. Cooperative agreements provide local school districts with the services of Vocational Adjustment Coordinators who are both faculty members of the school district, and functioning staff members and representatives of the state Division of Vocational Rehabilitation. The major functions of Vocational Adjustment Coordinators are: to provide vocational rehabilitation services to handicapped students; to act as consultants to the school staff on the vocational problems of handicapped persons; to cooperate with special class teachers in working out work-study programs for MR and other handicapped students; and to promote better understanding of MR, emotionally disturbed, and/or handicapped persons. At the present time 60 Minnesota school districts participate in this plan. There are 31 Vocational Adjustment Coordinators who provide services for 750 handicapped students. (No refs.) *J. K. Wyatt.*

1472 MILLER, ALFRED P. Small business enterprises program--a unique experiment. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 43-48.

"Small Business Enterprises," a vocational rehabilitation program, has provided business training for the cerebral palsied for 2 years. After a 1-year training period, an individual is offered the opportunity to be set up in an independent business. The purpose of the program was to discover the ability of cerebral palsied persons to operate a business. Six vending stands are presently functioning in several areas of New York City. Applicants are screened, trained, and placed in 92 to 108 weeks. Of 30 who started training, 14 have completed the course, 13 are presently in training, and 3 have dropped out of the program. Younger participants were more easily trained for their job. In general, good customer reaction was noted and excellent motivation was demonstrated by the participants. (No refs.) - *M. T. Lender.*

1473 DEAN, RUSSELL J. N. Rehabilitation services for the handicapped. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 55-57.

Legislation concerning the handicapped has evolved to a point at which the federal government and its agencies are producing specific programs as a part of their basic operations. Although 1968 will not be a fruitful year because of a late start and early adjournment by Congress, a great amount of legislation, especially health legislation, has been introduced. Amendments to the Vocational Rehabilitation Act have also been introduced. (No refs.) - *M. T. Lender.*

1474 WEBSTER, JOHN. Solving a work problem. *Teaching and Training*, 6(3):79-80, 1968.

Because industrial work proved unavailable, the Obridge Training Center was influenced by a supply of free timber and an instructor who was a skilled woodworker to start a "rustic-work" industry. The trainees--by using jigs, standard measurements, and sectional construction--were able to do almost all the work on hanging baskets, plant tubs, bird tables, and plant troughs. Competitive prices and extensive advertising gave a good start to the project and the attendant publicity also brought other industrial work and increased interest from the general public. (No refs.) - *E. F. MacGregor.*

Obridge Training Centre
Taunton, Somerset, England

1475 SLATER, GLADYS. Mental health week in a rural training centre. *Teaching and Training*, 6(3):81-82, 1968.

To increase the interest of the public in the work of Amwell View Junior Training Center for the mentally handicapped, a week's display of facilities available and the accomplishments of the pupils at work and play was given. Sessions were well attended by parents, friends, interested professionals, and the general public. (No refs.) - *E. F. MacGregor.*

Amwell View Junior Training Centre
Stanstead Abbots, Hertfordshire
England

1476 FENDELL, NORMAN. Foster grandparents join the rehabilitation team. *Digest of Mentally Retarded*, 4(2):110-113, 1968.

The sheltered workshop in Manchester, Connecticut, is a participant in the foster grandparent program sponsored by the Department of Health, Education, and Welfare and designed to raise the standard of living of elderly persons. This program helps both the elderly and the MRs. In becoming foster grandparents, older persons provide a 1:1 relationship for the MRs in the workshop, and earn a needed income for themselves. This relationship has provided the loving individualized attention, support, understanding, and direction which the MRs need to facilitate habilitation. It has given the foster grandparents a needed sense of worthwhile participation, a chance to use their knowledge, and a feeling of being financially independent. (No refs.) *J. K. Wyatt.*

Manchester Sheltered Workshop
Manchester, Connecticut

1477 STUBBINS, JOSEPH, & NOLL, ERIKA. *Workshops for the handicapped. An Annotated Bibliography, Number 5.* Washington, D. C., National Association of Sheltered Workshops and Homebound Programs, 1968, 55 p. $1.00.

A 126-item annotated bibliography including a wide variety of work programs for the handicapped is presented. This is the fifth edition of this bibliography and covers the literature from July 1967 through June, 1968 with other items which were not covered in earlier editions also cited. Programs in hospital, schools, and in federally financed projects are included. (No refs.) *M. Drossman.*

Recreation

1478 PROJECT ON RECREATION AND FITNESS FOR THE MENTALLY RETARDED, & LIFETIME SPORTS EDUCATION PROJECT. *Physical Activities for the Mentally Retarded: Ideas for Instruction.* Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, 137 p. (Price unknown)

In order to develop successful physical education and recreation programs for MRs, teachers should complement a soundly structured program by not making assumptions about the knowledge or performance level of the children, not insulting the CA of an individual by planning immature activities, totally involving themselves in activities and capitalizing on their individual qualities and techniques, using fun as a motivator, and basing all new experiences on previous knowledge and skill. Instructors need to be aware of the relationships and interrelationships of various levels of activities. The need for instructional information for MR children is on the first level--fundamental motor

development and self-awareness. MRs require specialized instruction in basic movement which will enable them to move toward the second and third levels--low organization activities and adapted and lead-up games. The instruction procedures in this book are designed to promote fundamental motor activity and skill exploration in the areas of net, racket, and paddle activities; rolling, pushing, and throwing activities; and striking and kicking activities. The basic physical education and recreation information in this book should be of interest to special education teachers, classroom teachers, parents of MRs, and recreation personnel. (15-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Viewpoint; Developing Fundamental Motor Skills; Suggested Teaching Techniques; Level I Activities; Level II Activities; Level III Activities; A Sample Unit on Bowling; and A Sample Unit on Softball.

1479 PROJECT ON RECREATION AND FITNESS FOR MENTALLY RETARDED. *A Guide for Programs in Recreation and Physical Education for the Mentally Retarded.* Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, 48 p. $1.25.

Recreation and physical education programs can have a positive impact on the total growth and development of MRs and can serve as the core to their education and training if they provide opportunities for the development of skill, competency, and knowledge. Teaching methods should be consistent, systematic, sequential, and progressive. Physical fitness programs should aim at the development of strength, power, agility, flexibility, endurance, balance, speed, and general coordination. The integrated development of motor ability requires neurological organization and motor generalizations. Motor activities should be selected on the basis of an individual's developmental level and readiness. Team sports and athletic contests require a degree of abstraction, anticipation, attention to detail, and response to cues which may be beyond the ability of many MRs. Individual sports and activities provide individual challenge, accomplishment and personal satisfaction which may be more appealing to MRs than actual participation in games. Regular community or school-centered recreation programs can provide opportunities for MR participation in all activities, in selected activities, or in specially planned and conducted programs. Every physical education and recreation program for MRs should include the evaluation and measurement of individual status, achievement, and progress. Awards and rewards can be used to motivate MRs to learn, participate, achieve, and improve performance. Recreation and physical education teachers involved in the development of programs for MRs should find this guide of interest. (33-item bibliog.) *J. K. Wyatt.*

1480 CHILDREN'S BUREAU. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of a Conference, December 1, 1966.* Washington, D. C., Social and Rehabilitation Service, 1968, 39 p.

This conference was attended by representatives of 17 agencies, the Children's Bureau, and the Secretary's Committee on Mental Retardation. Conference conclusions include: (1) opportunities for increased social development are a major need of MRs; (2) problems associated with social functioning involve the family and the community; (3) provisions for group work and leisure time activities for MRs have not increased at the same rate as have educational and other opportunities; (4) MR children and their families require a total spectrum of services; (5) the feelings of belonging, acceptance, competence, and achievement that MR children need to acquire are basic components of the character building objectives of agencies that serve youth; (6) MR children have been served by local chapters of national agencies for some time; (7) a skillful intake interview should be used by an agency which is beginning to provide services for a family with an MR child; and (8) staff in local facilities have adapted their methods and skills to meet the special needs of many MR children and adolescents. In order to enlarge existing programs and establish new ones, agencies need to coordinate their services, improve intra-agency communication, explore new financing arrangements, and train additional leadership. Grouping principles should be carefully explored, and innovative and experimental camp, summer, weekend, and vacation services should be investigated. (No refs.) - *J. K. Wyatt.*

CONTENTS: The Children's Bureau and Mentally Retarded Youth (Arnold); Programs for Retarded Girls (Amen); Programs for the Mentally Retarded (Brodkin); Boys' Club Services for Retarded Children (Wynn); and Group Work and Leisure Time Needs of Retarded Youth (Schreiber).

1481 AMEN, RUTH M. Programs for retarded girls. In: Children's Bureau. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of a Conference, December 1, 1966.* Washington, D. C., Social and Rehabilitation Service, 1968, p. 4-9.

Although MR girls have been included in the regular groups of the Camp Fire Girls for a good many years, the program has recently been expanded and adapted to meet their specific needs. Services for MRs are now provided in regular groups, in special schools, in regular schools, in MR institutions, and in resident summer camps. The impetus for program expansion came from the leaders of local councils, parents of MR girls, and from Horizon Club members. Although Camp Fire Girls does not provide a special program book for leaders working with MRs, the organization does provide guidelines, materials, and resource lists and recommend that leaders work closely with teachers and professionals in the field of MR. The program provides opportunities for MR girls to identify with a group that is not specifically for MRs, to develop close relationships with individuals outside the family and school setting, to be treated like all other girls, to participate in community activities, to expand their worlds, to learn social skills, to accomplish definite goals, and to share in a lot of fun. (No refs.) - *J. K. Wyatt.*

1482 BRODKIN, ARTHUR. Programs for the mentally retarded. In: Children's Bureau. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of a Conference, December 1, 1966.* Washington, D. C., Social and Rehabilitation Service, 1968, p. 18-24.

Jewish Community Centers and Young Men's and Young Women's Hebrew Associations provide, at the centers and in camp settings, programs and activities for MR children and adolescents. In the majority of agencies, the total agency program and facilities are available to MRs and their programs are integrated into regular services provided for various age groups. An intensive intake interview and all available diagnostic information are used to evaluate individual level of functioning and to determine readiness for program participation. Experience indicates that Center programs are of most benefit to EMRs and TMRs and that, except in the case of high level EMRs, the needs of MR individuals are best served by coeducational peer groups. Summer day and resident camps provide programs for EMRs from 6 to 16 years of age. These agencies also provide group and individual education and counseling services for parents of MRs. (No refs.) - *J. K. Wyatt.*

1483 WYNN, DAVID. Boys' Club services for retarded children. In: Children's Bureau. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of a Conference, December 1, 1966.* Washington, D. C., Social and Rehabilitation Service, 1968, p. 25-26.

The majority of the special services provided for MRs by the Boys Clubs of American are conducted at times when other members are not in attendance and include instructional and recreational physical and swimming programs. Clubs have learned that programs for MR boys do not require substantial additional funds, special equipment, or specialized training for personnel. The personnel of the clubs have benefited in that the sensitivity gained from working with MRs has added to their effectiveness with all boys. A large percentage of the boys who participate in special MR programs subsequently join the Boys Club and become regular members. The Tomkins Square Unit of Boys' Club of New York cooperates with a school and provides volunteer personnel and several hours of daily services for more than 200 special class children. This cooperative program furnishes opportunity for the development of social-recreational skills and for developmental activities which are not included in the regular school program. A parents' group which grew out of this program has printed a complete directory of agencies and services available for MRs throughout Manhattan. (No refs.) *J. K. Wyatt.*

1484 SCHREIBER, MEYER. Group work and leisure time needs of retarded youth. In: Children's Bureau. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of a Conference, December 1, 1966.* Washington, D. C., Social and Rehabilitation Service, 1968, p. 33-36.

Although the MR's level of social functioning is recognized as 1 of their most serious handicaps, few professional services have evolved to enhance their social development or meet their leisure time needs. The relaxed, comfortable atmosphere provided by group work, recreation, and leisure time activities can be used to help MRs understand

individual differences, decrease the importance of their handicaps, and allow their potential for positive change to emerge. Group service agencies and the particular skills of their social workers place these agencies in a particularly advantageous position for work with MRs. Once an agency accepts the concept of service to MRs, it can bypass traditional methods of operation and use good agency programing principles to adapt special group or regular programs to meet individual needs. Group work, recreation and leisure time programs have increased the ability of MRs to live with their families and in their communities by providing neighborhood services. Program development aimed at increasing the level of social functioning of MRs should seek to increase the number of group service agencies which will make their full resources available to MRs on a group and individual basis, continue the individualized services provided by specialized agencies, and identify those agency programs which best meet the psychosocial and leisure time needs of MR children and adolescents at any given time. (No refs.) - *J. K. Wyatt.*

1485 POMEROY, JANET. Recreation and day care for the severely retarded in a community setting. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 32-37.

The majority of the 415 individuals aged 2 to 70 years who are enrolled in the 22 different weekly programs conducted by the Recreation Center for the Handicapped, Inc., San Francisco, California, are MR, with the degree of MR varying from profound to mild. The day care program for SMRs and multiply handicapped children who are not eligible for any school provides opportunities for SMRs to participate in the fun and enjoyment that comes from playing with other children. The relaxed atmosphere of the program has stimulated the learning processes of some children. Of the 138 children who have been enrolled in this program during the past 2 1/2 years, 36 have been successfully enrolled in special schools for the handicapped, in special classes in regular schools, or in regular classes in regular schools. Day care funds contributed by the State Department of Social Welfare have been used to expand Center services to include a special recreation program and professional services for MR teenagers and adults who have recently returned to their communities from state institutions. The Center has been unable to accommodate all the persons desiring to enroll in this program and plans are underway to start similar programs in 3 neighborhoods. (No refs.) *J. K. Wyatt.*

1486 WILSON, GEORGE T. A community recreation team approach to programing for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 38-39.

The year-round recreation program for the handicapped provided by the Milwaukee Recreation Division provides opportunities for centralized and neighborhood programs, and for sheltered and nonsheltered activities. The program emphasizes cooperation with other organizations, the provision of a staff trained for work with MRs, the provision of in-service educational opportunities for staff members, the wide utilization of community facilities, and the use of private funds and grants as budget supplements. Program evaluation is carried out by the psychological services staff of the Milwaukee Public Schools and is based on comments from patrons, staff, parents, and outside sources. The most important aspect in the development of a recreation program for MRs is the use of adaptive programing methods. (No refs.) *J. K. Wyatt.*

1487 RAPP, WILLIAM. Play facilities and equipment for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 40-41.

The "Learn to Play Center" for MRs, developed by a member of the Joseph P. Kennedy, Jr. Foundation, is based on the concept that, since MRs need to be taught to play, their playgrounds should provide various levels of activities and progressions of learning. The Center covers less than 3 acres and has a number of private play areas which are designed to provide minimal distraction, optimal supervision, and opportunity for progress. Facilities of the Center include: a Grasstex track which provides access to various play

areas and serves as a motor skills learning area, a treehouse area, a reflecting pond, a camping area, a hand or foot operated railroad area, a swimming pool, a family picnic area, sidewalk games, a playing field, a skating area, a play hill area, a petting zoo of domestic animals, and auditorium facilities. (No refs.) - *J. K. Wyatt.*

1488 BABINGTON, WALLACE K. Support for Recreation programs for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 51-55.

U. S. government funds for recreation programs for the MR are supplied and administered through various agencies within the Department of Health, Education, and Welfare. Programs with recreation funds available include the hospital improvement program, the in-service training program, demonstration and training projects, construction of facilities program, child welfare research, training grants for preparing professional personnel, and program services. (No refs.) - *J. K. Wyatt.*

1489 GINGLEND, DAVID. Recreation programing for the adult retardate. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 83-86.

New recreation programs for MR adults should be designed so they begin with a generalized, exploratory club-type program and branch out at a later time into special interest programs which concentrate on 1 major activity. This plan allows the leader to assess the needs, abilities, interests, and potentialities of program participants and plan for the provision of activities which will enhance development. Well designed recreation programs which provide a broad spectrum of recreation activities meet the psychological needs of MRs by: helping each individual to gain a sense of identification; broadening social skills, and individual and group functioning abilities; and fostering learning and growth at every stage of development. TMRs and moderate MRs with other handicaps have an intense need for recreation programs which recognize their limitations and provide them with activities which stimulate and challenge, allow them to become involved, and provide opportunities for growth. (No refs.) - *J. K. Wyatt.*

1490 BUSHNELL, MART P. Scouting for the mentally retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 87-94.

In addition to the large number of unidentified MR boys who are integrated into troops and cub packs for normal boys, the Boy Scouts of America has 765 units (membership 13,000) specifically for MRs. Scouting provides inspiration to follow a high and demanding code of good conduct, fun, fellowship, social contacts, learning skills, and help toward becoming self-reliant. Handicapped boys are more like other boys than unlike them and should participate in a genuine scouting program. It may be necessary to begin the scouting program to MR boys by using a slower paced program, by varying membership age requirements, by using special program aids, by providing special training for leaders, by allowing for special recognition for the completion of individual tests or parts of tests, by providing careful explanations of advancement stardards, and/or by allowing more time for the passage of tenderfoot requirements. MR boys receive a genuine scouting program based on firm standards which are given flexible interpretation to meet the specific needs of the individual boy. (No refs.) - *J. K. Wyatt.*

1491 HILLMAN, WILLIAM A., JR. Recreation for the severely and profoundly retarded. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 95-97.

Recreation programs for the profoundly and SMR in institutions need to be staffed by full-time recreation personnel, to provide for a reduction in the resident-staff ratio, to explore and experiment with different kinds of recreation activities, and to be evaluated

to determine whether or not they are well-balanced and meet the psychological and social needs of the residents. Census data indicates that approximatley 125,000, or 60%, of institutionalized MRs have IQs below 35. Recent research and programing evidence discloses that improved adaptive and social behavior result from the change in environment provided by recreation programs. Community level recreation programs should be provided by municipal recreation departments. These departments have been reluctant to provide programs because of their lack of knowledge about MR, and budgetary problems. (7-item bibliog.) - *J. K. Wyatt.*

1492 BRAATEN, JUNE A. The importance of recreation programs for the retarded: Part II. *Mental Retardation (Canadian ARC)*, 18(2):15-19, 1968. (French text, p. 21-25)

The importance of recreation programs for the TMR cannot be overestimated. TMRs can achieve such things as physical fitness, neatness in grooming, and socially acceptable behavior. Recreation programs aid in the achievement of these skills as they provide the opportunity for reinforced learning. Active games help a child develop his motor skills; repetitive word games help a child develop his senses of touch and sight and his vocabulary. Good grooming is often developed by observing recreation leaders. Social training is best in small groups so that the MR and normal children can learn to relate to one another. Action programs will aid in the elimination of anti-social behavior. Praise for good behavior brings a better response to discipline than punishment for bad behavior. For those MR who are working, it is best to place the emphasis on completing a task; for those who are completely dependent on others, it is better to have movement and stimulation than inactivity. (No refs.) - *K. B. Brown.*

No address

1493 CANNER, NORMA. *...and a time to dance.* (Klebanoff, Harriet, Photography.) Boston, Massachusetts, Beacon Press, 1968, 136 p. $5.95.

A continuing program of creative movement can be used to help handicapped children express their feelings and explore and discover their world and themselves. The only requirement for creative movement is involvement. Dance is an area where all children can experience some success and satisfaction. Failure is impossible because there is no right or wrong method of self-expression and discovery. Dance classes have value for MR and CP children and emotionally disturbed adolescents and adults. A teacher can evaluate the special problems of a handicapped child and adapt herself and her material to meet his needs. The goals of a continuing dance program are: to allow sufficient freedom of self expression; to facilitate healthy personality development by helping the child to feel good about himself and to become a member of a group, and by using body action to encourage awareness of the whole self; to promote self respect and respect for others; to enhance the development of social awareness; to use body action and dance as constructive channels for conflict and hostility; to stimulate emotional, physical, and intellectual growth by promoting and sensitizing sensory abilities; and to bring about a definition and refinement of concepts. This practical guide of creative movement with handicapped children should be of interest to dance teachers, special educators, and parents of handicapped children. (No refs.) - *J. K. Wyatt.*

1494 WOOD, TOM. They're brightening future for blind. *ICRH Newsletter*, 3(14):1, 4, 1968.

Blind students are given the opportunity to participate in an organized and structured recreational program at the Tennessee School for the Blind. The physical education department staff is assisted by interested groups from the community. The program is coordinated so that each child, if he so desires, is provided with professional instruction in swimming, bowling, wrestling, and other prominent sports that children and adults enjoy. Interest and enthusiasm are high; team spirit abounds, and many wholesome interpersonal relationships are established which will enable the student to make a much better community adjustment at the time of their discharge from the school. Music and music instruction are provided and the residents enjoy the enriching experience of attending concerts and music festivals in nearby communities. (No refs.) - *S. Half.*

No address

1495 BROWN, PETE. Their problems bounce away. *ICRH Newsletter*, 3(15):1, 4, 1968.

The Outwood State Hospital and School, Dawson Springs, Kentucky, has recently expanded its

recreation program. New equipment has been purchased and the therapeutic benefits are obvious. A trampoline, which is used by 300 of the 425 MR youngsters and adults at the school, seems to help the MR forget many of their inhibitions. The program includes indoor recreation activities, bowling, basketball, swimming, archery, fishing, softball, volleyball, badminton, and flag football. Weekly talent shows are popular, and highlights of the year include a Fourth of July Carnival, a Christmas play, and "Date Night." (No refs.) - *K. B. Brown.*

1496 BRACKEY, E. LYNN. Florida day camp completes its fifth summer. *ICRH Newsletter,* 3(14):3, 1968.

Thirty-four physically and mentally handicapped children (CA 10 and above) participated in an overnight camping experience at a day camp in Jacksonville, Florida. The opportunity was provided through the cooperative effort and well-planned organization of local agencies and trained professional and nonprofessional staff. The project was partially supported by generous donations from the community. It is planned that those who participated in the program spend a week-end camp-out at a state park. Camping provides socialization, recreation, and therapy. (No refs.) - *S. Half.*

No address

1497 HEGI, STEPHANIE. Ferienlager fur geistig behinderte Kinder (Vacation camp for mentally retarded children). *Heilpadagogische Werkblatter,* 36(1):7-11, 1967.

An experimental 3-week vacation program was conducted for 35 MR children in the vicinity of Lucerne, Switzerland, to develop minimal and maximal prerequisites for vacation camps and to provide temporary relief for the parents and a camp experience for the MR children. A team of 13 specialists were in charge of the children, who were of both sexes, aged 8-29 years, and exhibited epileptic symptoms. The daily schedule consisted of gymnastics, rhythm, crafts, household duties, speech correction, singing, music-making, dramatics, and exercises in concentration and observation. Recommendations for subsequent camps include: limit enrollment to 24 children under 20 years of age; select the camp site carefully; and have the camp operated by a team of specialists who meet prior to camp for orientation and definition of objectives. (No refs.) *S. P. Glinsky, Jr.*

Institut fuer Heilpadagogik
Loewenstrasse 3
CH 6000 Lucerne, Switzerland

1498 Colonies de vacances (Vacation colonies). *Nos Enfants Inadaptes,* 27(3):17-27, 1968.

Retarded children benefit from summer vacations, as shown in various experimental camp-type situations. A group of 40 children with varied handicaps went to Belgium on a vacation paid almost entirely by the French government. They went to the beach, the movies, parks, and a zoo. Another group of institutionalized MRs used motor bicycles to reach their camping destination. A small group of children went mountain climbing, and were extremely proud of their accomplishment. Sixty MRs with IQs under 50 were able to participate in activities in a "sleep-away" camp for 1 month, where daily life was a close as possible to that of the normal child. Upon awakening each child had his own "mother," who assisted him in dressing and eating. During the day, the children were in groups of 5 or 6, and were able to enjoy outdoor life. Experimental camps and short-stay boarding houses with activities geared to the MR may be profitable for the children. (No refs.) - *M. Lender.*

1499 LEE, BOYD. Greenville, N. C. has day camp now. *ICRH Newsletter,* 3(5):1, 3, 1968.

A day camp for the MR was organized in Greenville, North Carolina. The children for the program were identified through the local Developmental Evaluation Center and the Greenville School for Trainable Children. The staff included a program director, future physical education teachers, counselors, assistant counselors, and Girl Scouts. The day camp operated on the premise that "disadvantaged children have the same basic recreational needs as normal children." Since the goal of each activity was to involve the total child, the schedule was flexible and explanations of activities and new games were kept simple. (No refs.) - *M. Lender.*

Box 202
Greenville, North Carolina 27834

1500 LIVESEY, NORMA. Our first camp. *Teaching and Training,* 6(4):121-122, 1968.

A group of 8 MR boys (CA 6 to 16 yrs) and 4 staff members of a junior training center embarked on a weekend camping trip. Surviving and enjoying the rain, mud, and pronounced independence of the boys, the author vows to repeat the adventure. (No refs.) *J. P. West.*

Northenden Junior Training Course
Manchester, England

1501 SCHEER, RALPH M. Fusion of social group work and recreation skills in providing service to the mentally retarded. *Training School Bulletin,* 65(1):21-27, 1968.

This article deals with the leisure time revolution and the effect that this phenomenon is having on society in general and for the retardate specifically. The question is raised as to whether sterile programing is frequently not being offered the institutionalized retardate where in reality creative emotional experiences are needed. The question is also posed as to whether recreators and social group workers are in actuality opening community opportunities to enrich the leisure time existence of the retardate in their home communities. (No refs.) - *Journal abstract.*

Austin State School
Austin, Texas 78763

1502 NEWTON, A. M. The centre club. *Teaching and Training,* 6(3):75-79, 1968.

Twenty girls and boys from the Black County Secondary School meet monthly with 20 MRs (CA 11-16) from the Training Center for the severely subnormal at Dixons Green in Dudley (England) for the purpose of providing social and recreational activities--singing, dancing, ball games, gymnastics, and refreshments--for the MRs. The meetings are mutually satisfying. The Department of Education should become responsible for the education of these subnormal children and recognize that they have human rights. (No refs.) - *G. M. Nunn.*

Bishop Milner School
Dudley, Worcester, England

1503 GRIFFIN, DARLA, & RELPH, MARGARET. Merri-Mixers: For adult retarded. *ICRH Newsletter,* 3(5):2-3, 1968.

Through participation in "Merri-Mixers," a weekly social club of the YWCA, 35 MR girls are learning to relate to others in groups. The informal recreation time is the only opportunity most of its members have for social interaction in a normal setting. The parents of the children are ardent supporters of the program. (No refs.) - *M. Lender.*

Young Women's Christian Association
498 Arrowhead Avenue
San Bernardino, California 92401

1504 ANDERSON, SHIRLEY. English volunteer plants recreation idea. *ICRH Newsletter,* 3(5):3, 1968.

Two social clubs for the TMR were formed in Madison, Wisconsin, by a visitor from London, England. Each club has 50 members and is coeducational, meets weekly, and is staffed almost entirely by volunteers who provide transportation, leadership, and funds. (No refs.) - *M. Lender.*

545 West Dayton Street
Madison, Wisconsin 53703

1505 NATIONAL RECREATION AND PARKS ASSOCIATION. *A Guide to Book on Recreation:* Twelfth Annual Edition, 1968-1969. Washington, D. C., 1968, 35 p. $1.00.

Books dealing with all phases of recreation and parks are included in this selected annotated bibliography. Subjects covered include: arts, crafts, and hobbies; drama, puppetry, and storytelling; games; social recreation; holiday activities; areas, facilities, and equipment; and professional development. (746-item bibliog.) - *A. Huffer.*

Residential Services

1506 DECKER, HAROLD A., HERBERG, EDWARD N., HAYTHORNTHWAITE, MARY S., RUPKE, LOIS K., & SMITH, DONALD C. Provision of health care for institutionalized retarded children. *American Journal of Mental Deficiency*, 73(2): 283-293, 1968.

Retarded children resident in a state institution were studied to determine: (1) prevalence of superimposed impairments; (2) need for care of these conditions; (3) associations of patient characteristics with care needs; and (4) implications for planning and organizing institutional care. General medical evaluation documented that such children usually have associated handicaps, often multiple. Many conditions could have been avoided or ameliorated by preventive care. Specialty consultations demonstrated need for a large volume and variety of diagnostic and therapeutic medical, social, and educational services. Results emphasize need for more comprehensive health care, including long-range comprehensive treatment planning, with emphasis on preventive and rehabilitative care. (9 refs.) - *Journal abstract.*

Department of Health Development
The University of Michigan
Ann Arbor, Michigan 48104

1507 APPELL, MELVILLE J., & TISDALL, WILLIAM J. Factors differentiating institutionalized from non-institutionalized referred retardates. *American Journal of Mental Deficiency*, 73(3):424-432, 1968.

This study was undertaken because there was no generally accepted set of criteria for admitting retardates to residential facilities. An attempt was made to establish objective criteria which would differentiate retardates admitted to a residential facility from those who were returned to their communities. Objective criteria in the form of a Priority Waiting List Questionnaire were suggested which could be used as a screening device in the evaluation of retardates referred for admission. Factors such as living conditions, community problems, and pressures appeared to be the most significant in differentiating those who were admitted from those who were not. (14 refs.) - *Journal abstract.*

Bureau of Education for the Handicapped
U. S. Office of Education
Washington, D. C. 20202

1508 FACKLER, ELEANOR. The crisis of institutionalizing a retarded child. *American Journal of Nursing*, 68(7):1508-1512, 1968.

The decision to institutionalize an MR child produces a family crisis which requires the intervention of the visiting nurse throughout the 4- to 6-week crisis period. In supportive conversations, the nurse examined the crisis-precipitating factors, educated the parents as to the causes of MR in order to relieve guilt feelings, provided information about child care and available community facilities, and led the parents of 2 mongoloid children to a healthy resolution of crisis. (7 refs.) *C. Rowan.*

Child Development Clinic
Children's Memorial Hospital
Chicago, Illinois

1509 DON, YEHUDA, & AMIR, YEHUDA. Institutionalized care for mentally retarded in Israel. *Mental Retardation (AAMD)*, 6(5): 29-31, 1968.

The purpose of this paper is twofold: (1) to review the institutionalization and care of retarded children in Israel--its scope, the process of diagnosis, ways of referral, and types of institutions; and (2) to summarize an economic-psychological study, the purpose of which was to investigate why the maintenance in government institutions is more expensive than in private or publicly owned institutions. (No refs.) - *Journal abstract.*

Department of Economics
Bar--Ilan University
Ramat--Gan, Israel

1510 BLATT, BURTON. The dark side of the mirror. *Mental Retardation (AAMD)*, 6(5):42-44, 1968.

Meaningful and significant changes in state facilities for the MR will come about only when those who work with the MR, legislators, administrators, educators, and the general public alter their conceptions of human potential and the methods of implementing them. Deplorable living conditions exist in many state institutions with patients neglected

physically, emotionally, and academically. Many patients have never been taught self-care skills involving developmental tasks of feeding, bathing, dressing, toilet training, and in the development of wholesome interpersonal relationships. Constructive and structured programing is almost nil and residents are rarely provided with motivation and incentive to achieve, and there is nothing available to promote and create interest for their learning to their maximum potential. These situations are far from hopeless and can be corrected by state and local officials, the legislature, and interested and concerned individuals by encouraging the establishment of small community residential facilities coupled with the intensive usage of available community resources, adequate and appropriate training programs, and research. Skills and techniques of students from local universities could be utilized and be very beneficial and valuable to the MR. (No refs.)
S. Half.

1511 GUNZBURG, H. C. *Journal of Mental Subnormality*, 14, Part 2(27):71-72, 1968. (Editorial)

Institutions for MRs are constructed "to facilitate with maximum efficiency the various care, treatment and training and rehabilitation procedures," rather than to provide atmospheric normality for residents. Even though the MR's training program includes visual and mechanical devices to encourage individualism, paradoxically, institutional architecture and procedures create an atmosphere of uniformity, dependency, and monotony for the resident MR. More MRs would be able to leave the institution and become purposeful individuals in the community if institutions diverted from this traditional pattern. (1 ref.) - *J. P. West.*

1512 STEVENS, HARVEY A. Some second thoughts on planning a residential center for the mentally retarded. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference*, held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 7-18.

Experience with multipurpose residential centers, specialized research-educational-vocational rehabilitation residential centers and residential centers specialized for SMR and PMR patients has induced some changes in the ideas about the planning and construction of residential centers. One of the basic problems in architectural planning is that often such plans quickly become obsolete; therefore, planning should include the possibility of changes of building code regulations, political influences, interdisciplinary influences, and even the "function versus aesthetic" architectural conflict. The choice of the site of the institution deserves the careful consideration of many factors including: proximity to the public, employees, and other institutions that may share equipment; land cost; and the possible association with a university. An experienced architectural firm, free from political pressures, should be hired to do the planning, and amply supplied with information as to the function of the structure. The facility should be designed to accommodate no more than 100 residents; living units should be limited to 25. The design of all treatment, rehabilitative, and educational areas must take into consideration, the kind of residents to be served, as well as the program and services offered, and then planned and equipped accordingly. (No refs.) - *M. T. Lender.*

1513 KUGEL, ROBERT B. Providing medical care to severely handicapped persons in residential facilities. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference*, held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 22-32.

The care provided to handicapped persons in residential facilities is poor because of overcrowding, underfinancing, and understaffing. Ignorance of the meaning of MR also has been a factor in reducing public interest and support of MR programs. Many residential units had previously been built away from urban areas, which reduces the opportunities of obtaining high quality staff members. There are problems of adequate salaries for professional help, and of reliance upon patient help. Many institutions are reporting overcrowded conditions of 25% to 50% more than capacity and per diem costs from $3/ to $12/ person. Upkeep, food sanitation, heating systems, lack of educational and vocational programing, lack of community resources, and obsolete architecture are accessory factors that are associated with insufficient funding. Massive re-education of leaders and the general public will be required; however, a possible partial solution would be to relocate

institutionalized persons into the community, into programs similar to the Foster Grandparent Program, but adapted to the needs of MRs and cerebral palsy victims. (No refs.) *M. T. Lender.*

1514 CAMPBELL, BARBARA. Care in institutions. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 35-39.

The Warren G. Murray Children's Center in Centralia, Illinois, houses 700 profoundly and moderately severe retardates in 7 cottages, each of which is nearly a complete home for each resident. The atmosphere at the center is similar to that of a community, with educational, religious, recreational, dental, and hospital facilities. The center has 3 program areas; residents are assigned to the program area appropriate to their needs--semi-dependent life, perpetual sheltered life, and non-ambulatory and acute hospital. Each unit is nearly a complete entity with a staff ranging from the Unit Director to the barber. It is the duty of each staff member to see that each resident is able to develop full growth and attainments according to his individual limits. Various problems of the non-ambulatory patients have been solved with wheelchairs, which have been adapted to size and fitted with special prosthetic devices. The use of such wheelchairs improves the resident's safety and posture, and increases his social stimulation. (No refs.) - *M. T. Lender.*

1515 HINOJOSA, VICTOR. Programmed learning and volunteers: Research and training project in a state school. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 40-42.

A program which trained volunteers to use programed learning material with MRs was instituted at the Austin State School, Texas. The volunteers, 9 housewives and 8 college students, were trained by a psychologist to teach spelling, arithmetic, and reading, through the third grade level. Sixty MRs had an average of 30 sessions or 14.2 hours of programed instruction. The posttest scores were double the pretest scores. Results indicated that limited training of volunteers to use programed learning methods has value in the field of special education. (No refs.) *M. T. Lender.*

1516 RAMM, JOAN. Community-residential facility cooperation. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 80-82.

The Seaside Regional Center, Waterford, Connecticut is neither physically nor socially isolated and the 240 residents participate in the educational, recreational, and religious activities of the community. The center is also responsible for 1,500 to 1,800 MRs in the counties of New London and Middlesex who reside at home. Center services for MR community residents include 5 centrally located day-care centers for preschoolers, sheltered workshops for moderately MR adults, and vocational rehabilitation. Community recreation programs for MRs are held in the major towns in the area which have special classes. These programs include bowling, swimming, basketball, and ceramics. Since 1966, community recreation programs have provided 3 or 4 hours a week of after-school weekly recreation for all children eligible for special classes. Community cooperation has been overwhelming and the involvement of local recreation departments has been outstanding. (No refs.) *J. K. Wyatt.*

1517 SOMMERHAGE, MARIA. Geschichte, Entwicklung und heutiger Aufbau des Bildungs--und Pflegeheims Haus Hall (History, development and present structure of the education and care home of Haus Hall). *Lebenshilfe,* 6(4):181-185, 1967.

Haus Hall, situated near Gescher in northern Germany, was a church orphanage and became a municipal center for the care and education of MRs in 1930. Because of expansion since World War II, the present physical plant includes the main building, central kitchen, group house, work shops for boys and girls, special school for slow learners, kindergarten, inside swimming pool, and 12 new bungalow-type group houses. A staff of 155 cares for 530 Ss, divided into 34 groups and 5 kindergarten groups. There are 9 classes and 5 classes for EMRs. The latter graduate

to work on the institution farm and work shop or in places accepting MRs. State-certified courses in MR education are held. (No refs.) *S. P. Glinsky, Jr.*

No address

1518 FISH, CHARLES H., & JONES, GLYNNA. Furazolidone in the treatment of institutional shigellosis. *American Journal of Mental Deficiency,* 73(2):214-217, 1968.

The purpose of this study was to determine the relative efficiency of furazolidone in gradually increasing increments of dosage and time in the treatment of shigellosis as compared to other drugs or combinations of drugs. Furazolidone in dosages of 8.8 mg/kilo or more/day X 14 days was equal in therapeutic efficacy to several different combinations of drugs. Moreover, during the 2-year-study period, none of the *Shigella* species developed resistance to furazolidone, whereas they did to the other medications tried. A standard regimen for post-treatment bacterial follow-up studies in research in shigellosis has been suggested. (12 refs.) - *Journal abstract.*

Fairview State Hospital
Costa Mesa, California 92626

1519 STERNLICHT, MANNY, & SIEGEL, LOUIS. Peak and nadir experiences of institutionalized retardates. *Training School Bulletin,* 65(1):5-6, 1968.

Peak and nadir experiences (positive and negative aspects of the "vivid experiences") were studied in 82 institutionalized EMR adults (mean IQ, 61; mean CA, 24). Each was seen individually and asked "What experience (thing) in your life do you remember the most?" Fifty-eight (70.8%) of the Ss reported peak experiences, 12 (14.6%) Ss reported nadir experiences which could not be classified (10 Ss failed to understand what was expected of them). When compared with published data, the MRs recalled significantly less nadir experiences than either the normal or psychotic groups. Although there were no statistically significant sex differences, the females expressed more peak experiences which related to visits home or visits by their parents to the institution. (1 ref.) - *M. L. Wiltshire.*

Willowbrook State School
Staten Island, New York

1520 WATSON, LUKE S. Applications of behavior-shaping devices to training severely and profoundly mentally retarded children in an institutional setting. *Mental Retardation (AAMD),* 6(6):21-23, 1968.

Applications of automated behavior-shaping devices to training institutionalized severely and profoundly retarded children were considered. It was suggested that a "behavioral engineer," assisted by such devices, could shape and maintain retarded behavior more effectively and economically than several behavioral engineers alone. Electronic training devices should be able to program and control discriminative stimuli, desired responses, and reinforcements more reliably than humans in many ward training situations. An ongoing automated toilet training program was described, and the advantages of such a procedure over a manual-tutorial procedure were pointed out. (7 refs.) - *Journal abstract.*

Columbus State Institute
1601 West Broad Street
Columbus, Ohio 43223

1521 GRAY, ALEXANDER J., FERGUSSON, ELIZABETH H., POWELL, GORDON F., & GAVIN, VIVIAN. First impressions of a hospital for the mentally subnormal. *Nursing Mirror,* 126(10):35-37, 1968.

Stimulated by friends' recommendations, working hours, opportunity for promotion, and an expanding physical plant, student nurses began training at Ladysbridge Hospital for the mentally subnormal. Spacious grounds and buildings and "homey" open villas make the hospital more comfortable for patients and staff. A variety of activities such as outings and sensory training including music, dancing, arts, and crafts help the MR patient develop to the limits of his potential. (No refs.) - *C. Rowan.*

Ladysbridge
Banff, Scotland

1522 LEVINE, BEATRICE. Readying retarded adolescents for work through volunteer services. *Children,* 15(4):130-134, 1968.

The Edenwald School in New York provides the mildly retarded adolescent with an opportunity for work experience by means of a volunteer project. The project involves adolescents from 14 to 18 years of age and emphasizes 3

main goals: a thorough understanding of the job in relation to the individual's capabilities; continuing progress reports on the performance on the job; and coordination of staff, services, and an effective liaison person between the EMR's own facility and that of the host agency. Residents have been placed as volunteers in hospitals and homes for the aged and although this project began as a summer program, its success has led to a year-round activity. Job performance and social adjustment have been satisfactory. With readiness for employment the adolescent has a better opportunity to make a successful adjustment in the home and community. (No refs.) - *S. Half.*

Edenwald School
Bronx, New York

1523 AVERBACH, JESS. New music therapy tool. *ICRH Newsletter,* 3(12):1, 4, 1968.

Utilization of the Chinese jump rope (a continuous woven elastic material) in conjunction with music therapy at the Pacific State Hospital (Pomona, California) with institutionalized profoundly and moderately retarded, cerebral palsied, non-ambulatory Ss (male and female), and psychiatrically ill Ss led to improvement in mobility, motility, communication, coordination, posture, dexterity, relationships among "shy" Ss, and actions of hypoactive and hyperactive Ss. Ambulatory Ss were placed in a circle or semi-circle; non-ambulatory Ss were positioned in a straight line. Holding, squeezing, and manipulating the rope, the Ss responded to the music by moving the rope "as they felt." Inability of a S to hold the rope was overcome by placing the rope around legs, waists, shoulders, necks, or under arms. It is suggested that the rope be 72-90 inches long; the size of each group be limited to 12; and a 1-to-1 relationship be used with severe cases. The study, conducted over a 6-month period, showed that the Chinese jump rope can be highly beneficial even to SMR Ss, and it is hoped that work in the future will include the totally and partially blind, deaf, and ambulatory and non-ambulatory pediatric cases. (No refs.) - *J. P. West.*

Pacific State Hospital
Pomona
California 91766

1524 KAGIN, SANDRA GRAVES. Programming art and occupational therapies for the mentally retarded: An overview. *Project News of the Parsons State Hospital and Training Center,* Parsons, Kansas, 4(6):2-9, 1968.

Occupational therapy (OT) in the past in many state institutions has been a "work as treatment" field and as such has been known for over 4,000 years; today OT is a diverse field and in MR institutions is approaching treatment in terms of daily living activities, muscle coordination, perceptual training, and creative play therapy. A novel term, "Art Therapy" has been devised for programs of encouragement of communication by MRs through art media. "Creative therapy," a term referring to neither art nor occupational therapy but which has elements of both, has also been promoted as a part of the treatment for the MR. A program to promote consciousness of social stimuli by use of art is described as programed and practiced by the OT department of the Parsons State Training School. (12 refs.) - *M. Drossman.*

Parsons State Hospital and
Training Center
Parsons, Kansas 67357

1525 MERTZ, FRANCES S. Art therapy with a retarded schizophrenic adolescent. *Project News of the Parsons State Hospital and Training Center,* Parsons, Kansas, 4(6): 10-14, 1968.

Art therapy is useful with the retarded schizophrenic, in that the S can become involved emotionally in his art work as a step in becoming more involved with life. An MR (CA 17, IQ 62) whose etiology of retardation appears to be primarily organic with psychotic overlay was characterized as apathetic, nervous, isolated, and unable to deal with stress. Papier mache, metal and wood sculpture, clay, and potter's wheel were selected and utilized as the appropriate media for the S to express his feelings during various stages of therapy. Learning to concentrate and gaining confidence in conversation resulted in the S becoming more aware of his emotions and channeling them into socially acceptable work. (No refs.) - *G. M. Nunn.*

Parsons State Hospital and Training Center
Parsons, Kansas

1526 BRYANT, JOHNNIE M. The food of love. *Staff*, 5(4):7-8, 1968.

A young institutionalized MR boy who caused nightly disturbances was discovered to be suffering from hunger pangs which were easily alleviated by a midnight snack delivered by a sympathetic nurse. (No refs.) - *K. B. Brown.*

St. Louis State School and Hospital
St. Louis, Missouri

1527 KARPINSKI, ANDREW JOHN. Activities for leadership development in an institution for the mentally retarded. *Dissertation Abstracts*, 67(11,A):3623, 1967.

A staff development program for department heads of Laurelton State School and Hospital (Pennsylvania) utilizing informal and formal seminars is described. Other activities in the program included field trips, use of consultants, literature searches, and independent work sessions. Two rating scales were developed to measure the participants' perception of their programs in the institution and the value of the various activities in the study. Evidences of changes in staff communication and services to students were significant at the .01 level. (No refs.) *M. Drossman.*

No address

1528 WOOD, TOM. Teamwork key ingredient in aiding total individual. *ICRH Newsletter*, 3(14):1, 3, 1968.

The adjunctive therapy program at the Clover Bottom Hospital and School in Donelson, Tennessee, capitalizes on multi-disciplinary team work in developing the MR. The program includes: indoor and outdoor games; art and craft activities; participation in the operation of the greenhouse, farm, radio station, barber and beauty shops, and TV repair shop; and experiences in how to utilize community facilities and programs and spend one's leisure time. (No refs.) - *S. Half.*

No address

1529 PARNICKY, JOSEPH J. An audio-visual approach to employee orientation in a small institution. *Mental Retardation (AAMD)*, 6(5):32-34, 1968.

At the Johnstone Training and Research Center (New Jersey), an audio-visual technique has proved to be a valuable and beneficial adjunct in the orientation and training of new employees. Essential information is conveyed quickly and effectively in a 30-minute session with the aid of 35 mm slides and a synchronized tape recorder, both of which can be easily updated. (5 refs.) - *S. Half.*

Johnstone Training and Research Center
Bordentown, New Jersey

1530 SAFFELL, JOHN W. New hope through new careers. *Motive*, 14(5):2-6, 1968.

The Ohio Division of Mental Hygiene has instituted at the Columbus State Institute a "New Careers" program which is designed to recruit and train adults who are interested in learning patient care as a vocation. While enrolled in the intensive and comprehensive 5-month pre-employment training program, the trainee receives a salary from the federally granted New Careers program of the Columbus Metropolitan Area Community Action Organization (CMACAO). All trainees are assured positions as attendants following successful completion of the courses for the state requirement that hospital attendants have a high school diploma is waived. The program has provided a better trained staff resulting in improved patient care; also the trainees have the opportunity to help the less fortunate while helping themselves through gainful employment. CMACAO has fulfilled part of its goal by providing assistance, training, and employment to unemployed or under-employed individuals, many of whom were welfare recipients. (No refs.) - *S. Half.*

Ohio Department of Mental Hygiene
State Office Building
Columbus, Ohio 43215

1531 AMERICAN PSYCHIATRIC ASSOCIATION. *1967 Directory of Facilities for the Mentally Ill and the Mentally Retarded in the United States.* Washington, D. C., American Psychiatric Association, 1967, 63 p. $2.00.

A directory of institutions for the MR and mentally ill in the United States is presented. Entries are categorized by facility type, private or public control, and include information on the chief administrator, the address, number of beds, number of physicians and other personnel, total annual capital expenses, total annual drug expenditures, and total other annual expenses. Approximately 35% of the actual existing institutions are not listed as they did not reply to the survey questionnaire. (No refs.) - *M. Drosman.*

CONTENTS: Description of the Survey; Tabulation of Returns from the Survey; Psychiatric Hospitals; Facilities for the Mentally Retarded; General Hospital Psychiatric Units; Psychiatric Clinics; and Other Related Facilities.

PROGRAMS AND SERVICES

Planning and Legislation

1532 GETTINGS, ROBERT M. Mental retardation and the planning-programming-budgeting system. *Mental Retardation (AAMD),* 6(6):24-26, 1968.

Currently, all Federal agencies are in the process of instituting a new budgetary procedure referred to as planning-programing-bugeting. The PPB system stresses the need to consider carefully both the short term and long range economic costs of various program alternatives in formulating public policy. This paper briefly reviews the historical development and essential elements of PPBS and summarizes some of the potential shortcomings pointed out by the system's critics. A few possible applications of PPBS in the field of MR are suggested, and the promising aspects and potential problems associated with the system are assessed. (7 refs.) - *Journal abstract.*

President's Committee on
Mental Retardation
Washington, D. C.

1533 MASSACHUSETTS DEPARTMENT OF MENTAL HEALTH. Regionalization of services for the mentally retarded. *New England Journal of Medicine,* 278(24):1349, 1968.

The Massachusetts Department of Mental Health plans to eliminate the anticipated problem of overcrowding MR institutions (6,500 MRs currently reside in 5 institutions) by regionalizing and providing alternative services. Presently, criteria for residential facilities are: newly constructed facilities will house a maximum of 250 patients; the number of MRs in current state institutions will be reduced to 500; and only educational, therapeutic, and experimental facilities will be added to institutions presently existing. As an alternative to institutionalization, a community program will be instituted and will include expansion and improvement in special education classes, preschool programs, day care programs, vocational training centers, and diagnostic and therapeutic services. (No refs.) - *J. P. West.*

1534 PROJECT ON RECREATION AND FITNESS FOR THE MENTALLY RETARDED. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, 144 p. $3.00.

Although physical education and recreation activities make very important contributions to the development of MRs of all ages and opportunities for participation in them should be increased, these areas have frequently been neglected or entirely omitted from educational programs and long-range care and educational planning for MRs. There is a current need for additional research evidence which will point toward the specific physical education and recreation needs of MR subgroups and identify specific activities which aid development. Financial assistance is

available from the U. S. government and/or private foundations for program development, personnel training, innovative education, and the development of play facilities and equipment. These proceedings emphasize the use of an interdisciplinary team approach for all types of physical education and recreation situations for all ages and levels of MRs. Physical educators, recreation specialists, special educators, psychologists, and professionals responsibile for physical education and recreation activities in public schools, residential facilities, day care centers, parks, and voluntary organizations should find the wide variety of topics included in this book of interest. (32 refs.) *J. K. Wyatt.*

CONTENTS: A New Dawn (Reynolds); Physical Education and Recreation for the Mentally Retarded in Norway (Lie); The Importance of Physical Activity for the Mentally Retarded (Stein); The Physical Educator as a Member of the Special Physical Education Team (Geddes); The Team Approach in Programing (Ogden); Recreation and Day Care for the Severely Retarded in a Community Setting (Pomeroy); A Community Recreation Team Approach to Programing for the Mentally Retarded (Wilson); Play Facilities and Equipment for the Mentally Retarded (Rapp); A Program of Developmental Motor Activities for Retarded Children (Bowers); Support for Recreation Programs for the Mentally Retarded (Babington); Physical Education Programs for the Mentally Retarded (Meisgeier); Financial Assistance and Resource Material Available from the U. S. Office of Education (Olshin); Preparation of Grant Proposals (Vaughan); Comprehensive State Planning in Mental Retardation (Webster); The Role of Motor Activities in Programs for Retarded and Educationally Handicapped Children (Cratty); Community-Residential Facility Cooperation (Ramm); Recreation Programing for the Adult Retardate (Ginglend); Scouting for the Mentally Retarded (Bushnell); Recreation for the Severely and Profoundly Retarded (Hillman); Sex Education for the Mentally Retarded (Sengstock); and A Challenge to Action (Shriver).

1535 REYNOLDS, MAYNARD C. A new dawn. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 3-10.

Although there has been a revival of interest in MR in recent years and every state has developed a comprehensive MR planning program, planning and programing for the important areas of physical education and recreation have frequently been omitted. This situation needs to be identified and corrected so that the professionals in these fields can define needed programs, share information concerning programs, become aware of available resources, and aid in program implementation. Physical education and recreation programs are especially crucial for MRs because their problems are often compounded by physical fitness problems, they frequently fall below their age norms in motor abilities, and recent evidence indicates that there is a possibility that motor experiences have a direct influence on cognitive development. Recreation opportunities for adult MRs could be helpful in dealing with job problems which arise from relationship difficulties and from problems connected with the management of their affairs outside of employment. Physical fitness and recreational activities also can be used to teach MRs to follow rules, cooperate with others, and respect others. The present trend toward asking the majority of MRs to live in their communities requires communities to provide additional school, employment, medical care, recreational, and religious opportunities. (No refs.) - *J. K. Wyatt.*

1536 OGDEN, JOHN A. The team approach in programing. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 30-31.

Colorado has been energetically involved in the provision of planned physical education programs for handicapped children. Outside funds and local grants have been allowed the initiation of local school programs and enabled the training of physical education teachers to work with MRs. As of 1966, the state began to reimburse local school districts for 80% of the salaries of approved full-time physical education teachers who work with the MR. State departments of education need to provide consultant services for local school districts, and standards for the handicapped need to be established. (No refs.) - *J. K. Wyatt.*

1537 OLSHIN, GEORGE M. Financial assistance and resource materials available from the U. S. Office of Education. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 60-63.

The purposes of the extramural and demonstration projects related to the education of handicapped children which are funded under the provisions of Section 302 of Public Law 88-164 are (1) to translate behavioral and social science research into practical applications for handicapped youth; (2) to develop programs and procedures based on known facts, ideas, and theories which can be used by classroom teachers and educational specialists; and (3) to effect innovations in learning situations, classroom procedures, methods and materials which will improve the education of handicapped children. Program focus is on the use of improved instruction or other means to bring about constructive modification of behavior. Applications for research funds are reviewed by Office of Education specialists and by professional review panels in the areas of MR, deafness, impaired speech and hearing, visual handicaps, serious emotional disturbances, crippling, and/or other health impairments. Final recommendations are made by an internal review committe which reviews the comments and reactions of the specialists and the panel. The most important elements of research applications are whether the specific approach proposed is appropriate to the questions to be answered, and whether the agency possesses the staff and facilities to carry out the proposed research. (1 ref.) - *J. K. Wyatt.*

1538 VAUGHAN, TONY D. Preparation of grant proposals. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 64-68.

Proposals aimed at obtaining federal government or private foundation grants to improve the education of the handicapped should: be complete, self-contained documents; be self-explanatory; explain and defend their purposes with specific reference to curriculum development and other program components; and identify either the specific personnel who will use the program or the types of teachers and teaching methods which the program will require. Review panels evaluate proposals in terms of their quality, coordination, appropriateness, and probability of success; the experience and competence of the staff; the availability of suitable facilities; and the commitment of the institution or agency to the program for which a grant is requested. Proposals should contain an introduction; a statement of the rationale and objectives of the program; a statement describing institution commitment; a description of the content and organization of the program; information about practicums and field experience; data on instructional staff members expected to participate in the program; a description of the resources and facilities of the institution; criteria for the selection of programs fellows; provisions for program improvements, expansions, and changes; a list of accrediting or approving agencies; and a summary of program factors which will provide for the highest possible achievement of its objectives. (No refs.) - *J. K. Wyatt.*

1539 WEBSTER, JOHN D. Comprehensive state planning in mental retardation. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 69-71.

Although the state planning programs for MR funded by the 1963 Maternal and Child Health in MR Planning Amendment (PL 88-156) have been basically extremely successful, recreation has had only a minor role, and there is a tremendous need for the participation of recreation professionals in on-going state planning programs. Public Law 89-37 has authorized continued planning and implementation which allows for innovative approaches. Most states are aware of the recreational needs of MRs, but the provisions included in most state plans are quite general and need the honing and refinement which professionals in the field can provide. (No refs.) *J. K. Wyatt.*

1540 SHRIVER, EUNICE K. A challenge to action. In: Project on Recreation and Fitness for the Mentally Retarded. *Programming for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 100-104.

In order to provide adequate physical education and recreation programs for MRs in the United States, there is a need for more trained specialists, more funds, a nationwide fitness program which will provide standards for normal children which can then be scaled down for MR children, nationwide athletic competition among teams of normal children and MR children, and adapted games for MRs. Although participation in physical education and recreation programs can bring about dramatic changes in the behavior of MRs, these programs are not available for most MR children because city, state, and national governments do not provide funds for them. Less than 20% of MR children participate in school recreation programa; only 4% play at public recreation facilities; 90% are excluded from school swimming programs; over 60% are not allowed to participate in gymnastics and track. Such an educational policy must be seriously questioned for there is a definite correlation between physical activity and the growth of intelligence in all children and evidence that proper physical education and recreation training can improve the intelligence of MRs. (1 ref.) - *J. K. Wyatt.*

1541 Handicapped Children's Early Education Assistance Act of 1968 P. L. 90-538. *Programs for the Handicapped,* Newsletter of the U. S. Health, Education, and Welfare Department, 68(12):1-6, 1968.

Handicapped children from birth until school age will for the first time be given an opportunity to benefit from special educational programs; this new development in the field of retardation has become a realization by enactment of the Handicapped Children's Early Education Assistance Act (PL 90-538). This legislation provides for the development of 75 to 100 model programs designed to develop the best possible approach to help preschool aged handicapped youngsters. The basic problem is to recognize the handicap at the earliest possible age and then to implement appropriate programing suited to the individual child's needs. Early years of a child are the most critical and, in many instances, without proper evaluation, study, and follow-up, a child's potential can be significantly deterred. Parents will have the opportunity to receive professional guidance and counseling services in addition to supplementary programs to help them understand and accept their child's handicap. Each model program is to be coordinated with a local school system. The government will assume financial responsibility up to 90% of the involved cost and the remaining share may be in cash or in kind at the local community level. Continuous evaluation of the programs will be done with special emphasis placed on eliminating ineffectual methods and promoting and implementing successful approaches. Handicapped children as defined by this Act are all children who require special education and related services. (2 refs.) - *S. Half.*

1542 CRAFT, MICHAEL, & HEATON-WARD, W. A. Children in need. *Mental Health,* (Autumn):30-33, 1968.

No child should be in a hospital unless he is being investigated pediatrically or needs inbed nursing. Foster homes, hostels, and private boarding schools subsidized by the social security grants are suitable for meeting the needs of the subnormal. Hospitals for the mentally subnormal may be in the best interests of the family as well as the child if the mental and physical health of the family is threatened by the child's demands. The ideal hospital meets the educational, occupational, recreational, diagnostic, and treatment needs of the patient while providing homey residential units. Since hostels would not be able to meet the needs of those with IQs below 25, the hospital provides services a hostel would not be able to provide. (No refs.) - *G. M. Nunn.*

No address

1543 UNITED CEREBRAL PALSY ASSOCIATIONS. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, 88 p. (Price unknown)

Legislature in the various levels of government is becoming increasingly important for

the improvement of the care of the handicapped and MR. Overcrowding, understaffing, and underfinancing are problems that new programing, planning, and legislation may be able to overcome in the future. In many cases volunteers can be trained and utilized and the handicapped themselves may be able to perform useful services. The Partnership for Health Act (PL 89-749) provides funds to states, but it is necessary that various interest groups become active in apportioning the amounts of the funding. Cooperation between public health organizations and agencies is important for the efficient use of the available facilities and funds since legislation in 1968 appears to be lagging behind that of the previous 4 years. State legislation has been beneficial in the problems of newborn PKU testing, child abuse, and transportation for the handicapped and aged; however, state legislatures may begin to severely control the fund campaigns of non-profit organizations. The public school system should stress the success of integrated programs in which the handicapped are assimilated into the public schools and its facilities. New methods with teaching machines, advancements in architecture, architectural psychology and new methods of providing items such as wheelchairs have helped the education, assimilation, and rehabilitation of the handicapped. The proper management of residences and the development of existing resources will bring needed efficiency into the milieu of the handicapped and the people that care for them. (No refs.) - *M. T. Lender.*

CONTENTS: Removing Architectural Barriers Is Not Enough (Helsel); Facilitation of Special Education Programming Through Architecture (Bertness); Some Second Thoughts on Planning a Residential Center (Stevens); Role of Architectural Psychologists (Taylor); Architectural Psychology at University of Utah (Taylor); Providing Medical Care to Severely Handicapped in Residence (Kugel); Better Care for Severely Involved Cerebral Palsied Residents of State Institutions (Haynes); Care in State Institutions (Campbell); Programmed Learning and Volunteers in a State School (Hinojosa); Small Business Enterprises (Miller); PBAA Newstand Expansion (Miller); Rehabilitation Services for the Handicapped (Dean); Remarks--Relationship of Social and Rehabilitation Services to UCPA Programs (Usdane); State Legislation Progress (Ackerman); Remarks--Relationship of Office of Economic Opportunity Programs to UCPA (Richter); Remarks--Relationship of Mental Retardation Programs to UCPA (Kirkland); Remarks--Relationship of Children's Bureau to UCPA (Chenoweth); Remarks--Relationship of U. S. Office of Education to UCPA (Lucito); and Remarks--Comprehensive Health Planning (Olsen).

1544 ACKERMAN, PAUL R. State legislation progress. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference*, held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 61-64.

There are 3 basic "landmarks" or trends in special education legislation in the states. The "mandatory planning" type of state law requires that local school districts must have long range plans for meeting the educational needs of the exceptional child, and such plans must be presented to an agency of the state for review. The second "landmark" is state legislation that allows special education in regional programs, which has induced cooperation between various districts to help victims of uncommon crippling conditions. The third major trend is the beginning of regional centers for instructional materials. Adequate appropriations, receptive school systems, and good relationships between schools and state departments will insure the success of the legislation. (No refs.) - *M. T. Lender.*

1545 RICHTER, WALTER H. Remarks--Relationship of office of economic opportunity programs to UCPA. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference*, held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 65-69.

State legislation and the Office of Economic Opportunity have aided the handicapped and MR as well as other disadvantaged persons. Most states have recommended or made mandatory the testing of newborn babies for PKU. Approximately 34 states presently have laws which eliminate architectural barriers and allow public buildings to be available to and usable by handicapped persons. As of 1966, 51 statutes which deal with child abuse existed in the states and Washington, D. C. The latest legislation concerning the release of charitable organizations from liability for torts has been tending toward the non-release of liability; therefore, it is advisable for such organizations to review their current liability policies. Legislation regarding the limiting or controlling of fund-raising campaigns is being considered on the state and local levels and the Legal and Legislative Department of United Cerebral Palsy Associations has pointed to the need for a means to inform voluntary health organizations about pending and proposed regulatory

legislation. There is still a need for improvement in transportation on the handicapped and the Federal Department of Transportation is presently trying to solve problems of transportation for the aged. (No refs.) - *M. T. Lender.*

1546 CHENOWETH, ALICE. Remarks--Relationship of Children's Bureau programs to UCPA. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 76-80.

Cooperation between agencies is necessary in order to provide the amount and quality of care that is needed by children affected by many disorders which are presently little or not at all controlled. The need for integrated and continued services in the Crippled Children's program as well as the need for help for the patient with motor deficits are common concerns of persons who are involved with similar organizations. The Children's Bureau has an active preventive program, including the Maternal and Child Health program, which will in the near future initiate a rubella vaccine program. The orthopedically and neurologically affected children comprise the bulk of those in the Crippled Children's program, but children with cerebral palsy are the largest single group receiving the benefits of this program. The Children's Bureau has several new programs in operation and many more in planning stages. (No refs.) *M. T. Lender.*

1547 LUCITO, LEONARD. Remarks--Relationship of U. S. Office of Education to UCPA. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston, Texas, March 21-23, 1968. New York, New York, 1968, p. 81-85.

The Bureau of Education for the Handicapped (BEH) has research, training, and services divisions. The Research Division has modified teaching machines for use with severely affected children and is presently studying neurological impairment and perceptual disorder. The Research Division also supports 14 regional instructional materials centers. The Division of Services assists states to improve educational services for the handicapped and has funds available for this purpose. The Training Division provides grants for training teachers for the physically handicapped and in 1967-68 about 800 teachers were trained. Presently, there are efforts to increase the amount of funding available for this program. (No refs.) *M. T. Lender.*

1548 OLSEN, W. L. Remarks--Comprehensive Health Planning. In: United Cerebral Palsy Associations. *Selected Papers from Professional Program Segments of United Cerebral Palsy's Annual Conference,* held in Houston Texas, March 21-23, 1968. New York, New York, 1968, p. 86-88.

The Comprehensive Health Planning and Partnership for Health concepts are purposely poorly defined by the federal government, since the Partnership for Health Act (PL 89-749) delegates planning to the local or state communities. Sections 314a, 314b, 314c, and 314d provide that money will be awarded to a single agency of the state for Comprehensive Health Planning and that the agency will be chosen by the governor. The money can be awarded to any legal organization, but 15% of it must be used for mental health purposes. Interested persons should become members of a health advisory council in the states that have a State Health Planning Agency, so that the funds can meet more equitably the needs of the various interest groups. (No refs.) *M. T. Lender.*

1549 The Seebohm committee. *Teaching and Training,* 6(4):97-98, 1968. (Editorial)

The Seebohm Committee was appointed in December 1965 to investigate and to constructively criticize the social services in England and Wales. Within their 370-page report, 6 recommendations were made regarding mentally handicapped children, with the emphasis on "one unified social service." However, the implication that adult training centers for MR are less important than junior training centers may evoke public criticism. (No refs.) *J. P. West.*

Community Programs

1550 SHORT. The setting-up and administration of hostels. *Journal of the Scottish Society for Mentally Handicapped Children*, 3(2):1-4, 1968.

Hostels, which offer a sheltered environment while the MR is receiving training, are extremely helpful in the preparation for return to home or to suitable lodgings. In setting up a hostel, it is important that cooperation exists among local hospitals, voluntary agencies, workshops, and recreational facilities. The half-way hostel is 1 type in which the handicapped can be rehabilitated. The number accommodated should be kept small--approximately 17 residents at a time--and close cooperation is maintained between the hostel and hospital medical staff. Patients should be screened by medical staff and arrangements should be made for each patient to attend an industrial rehabilitation unit. The patient should be given training in budgeting money for clothing, laundry, and other requirements. About 9-10 months after starting work, the resident is usually ready to leave the hostel permanently although he is encouraged to return to the hostel regularly to seek advice or to use it as a second "home." (No refs.) *M. L. Wiltshire.*

No address

1551 VANIER, JEAN. Une doctrine des foyers pour adultes (A doctrine of small homes for adults). *Nos Enfants Inadaptes*, 27(3): 13-16, 1968.

In place of a large institution, a "foyer," or small home, should be a better place to house the adult MR. A small home that can house and feed several people, would give the MR necessary warmth and love. The inhabitants of small homes could work in factories in towns in which they live and many such homes should be available in the same town in order that the MR can have his "own" home, yet also be able to socialize with others like him. It is suggested that perhaps 10 homes could be located in a section of a village, near an infirmary, with an administration building, chapel, and cultural center. The homes could be within a normal village or be isolated; however, it is known that the MR profits from contact with normal people, and can establish meaningful bonds with them. Drawbacks to the homes are the MR will not receive enough stimulation and will live with the same people all his life. Those who work with MRs must be well trained and mature. In addition, the inhabitants of the home should not all be the same age. The handicapped need no special preparation for life in a home, because it is human nature to live in a "family" situation. (No refs.) - *M. Lender.*

No address

1552 ZUCMAN, E. Les consultations hospitalieres specialisees du C.E.S.A.P. (Specialized hospital conferences of C.E.S.A.P.). *La Medecine Infantile*, 75(4):277-279, 1968.

In 4 Parisian hospitals, the C.E.S.A.P. holds clinics in the afternoon for the SMRs of the city. A complete team (a doctor, a psychologist, a special educator, a kinetotherapist, and a social worker) works together to help the MR patients. The children who frequent the clinics are varied in CA and IQ and nonretarded children with behavior problems or neurological disorders are also accepted. Family problems are treated as well as the patient. The clinics do not operate to place people in institutions, although they will help locate suitable homes or institutions. Currently, 3 research projects are being conducted at the clinics: a description of SMR; a search for suitable methods to test the MR; and a method of measuring tolerance of parents toward their MR children. (No refs.) *M. Lender.*

Comite d'Etude et de Soin aux
Enfants Arrieres Profonds
3, Avenue Victoria
Paris, France

1553 WELCH, WAYNE. Mending of the minds. *Louisville Times*, October 24, 1968.

Kentucky's community mental health centers are now operating in 14 out of 19 regions; this has been made possible through the cooperation of community leaders and doctors who want mental health facilities located at the community level. Federal grants for staff and construction have supported the initial financing, but this must be changed to local support when the federal funds are phased out. The centers are staffed by a psychiatrist, psychologists, social workers,

nurses, mental health workers, alcoholic and rehabilitation consultants, a business manager, and a secretarial staff. Some centers have MR representatives and in northern Kentucky (an 8-county area) special classes have been set up for preschool children. (No refs.) - *M. L. Wiltshire.*

Louisville Times
Louisville, Kentucky

1554 CLARK, WINIFRED M. Planning a community group home. *Mental Retardation (Canadian ARC),* 18(2):31-33, 1968.

The Greater Victoria Association for the Retarded (GVAR) has investigated the establishment of small group homes located in the community for young MRs to use as second homes either temporarily or permanently. Members of GVAR have studied all information about comparable programs, visited similar projects and evaluated the effectiveness of these homes in relation to the current needs in Victoria. Public and private officials, families, and interested institutional staff were contacted for advice. The purchase, staffing, and financial support of the Group Home for Retarded Adults is a priority goal of GVAR and hope is expressed that the first such home will be available in the near future. (No refs.) - *M. Drossman.*

Greater Victoria Association
for the Retarded
Victoria, Canada

1555 FENCOTT, ELIZABETH. The role of the volunteer in a mental retardation clinic. *Mental Retardation (Canadian ARC),* 18(2):19-20, 1968.

In the Mental Retardation Centre (Toronto), volunteer workers are used extensively to supplement the center staff. In the research department, they help rate data; in the psychology department, they work with the children to improve self-control and attention span. A teenage girl program was organized by the volunteer workers in order to give MR girls group experience. The volunteers also visit children in the ward and help in the homes of MR. (No refs.) - *K. B. Brown.*

Mental Retardation Centre
Toronto, Canada

1556 The foster grandparent program: A progress report--1968. *Programs for the Handicapped,* Newsletter of the U. S. Health, Education, and Welfare Department, 68(13): 1-5, 1968.

A review of the progress made in the foster grandparent program demonstrates that it is most beneficial to utilize older persons to work with retarded children. A total of 68 projects are presently operating in 40 states and Puerto Rico. This program affords retarded children the opportunity to be exposed to enriching experiences, helps them learn social skills, gain confidence, and improve their self-concept. The foster grandparents have the time, patience, and love to give to these youngsters. In return, their own self-esteem is enhanced, they possess a greater feeling of well-being and accomplishment, and their life as well as that of the retardate takes on new meaning and purpose. All evaluations of the foster grandparent projects, over the past 2 years, emphasize their success and potential for additional expansion and growth. (No refs.) - *S. Half.*

1557 ARNOLD, MILDRED. The Children's Bureau and mentally retarded youth. In: Children's Bureau. *Group Work and Leisure Time Programs for Mentally Retarded Children and Adolescents: A Report of A Conference,* December 1, 1966. Washington, D. C., Social and Rehabilitation Service, 1968, p. 1-3.

The present emphasis of the Children's Bureau is on the maintenance of MR children in their own families and communities, and the provision of community services for them. Community resources needed for MR children include specialized medical and educational services, vocational training opportunities, day care facilities, foster homes, small group homes, homemaker services, educational programs for parents and foster parents, and community education and support. The Children's Bureau also functions as a preventive agency and seeks ways to identify and provide services aimed at the reversal of undesirable living conditions for MR children not known to any agency. (No refs.) - *J. K. Wyatt.*

1558 DAY, R. W. The role of public health agencies in clinical genetics. In: Crow, James F., & Neel, James V., eds. *Proceedings of the Third International Congress of Human Genetics*. Baltimore, Maryland, Johns Hopkins Press, 1967, p. 93-96.

Public health agencies could play a greater role in the case finding, diagnosis, and management of genetically determined disease. Existing contacts with families might provide additional data for registries of handicapping and inherited conditions. The relative rarity of these conditions and the complexity and expense of multisystem diagnostic and management of procedures necessitate centralized and specialized services impractical for individuals or institutions. Information about genetic mechanisms thus obtained might then be transmitted back to those responsible for case finding and these and other public health workers educated in the specialized management and control of such entities as congenital malformations and MR. (6 refs.) *E. L. Rowan.*

Protective Services

1559 GEORGES, M. -T. La prise en charge sociale du jeune enfant deficient mental et de sa famille (The acceptance of the responsibility by the social services of the mentally retarded child and his family). *La Medecine Infantile*, 75(4):291-292, 1968.

The care of the MR child and his family are the responsibility of the social services, as well as the medical field,and the social worker must serve as an intermediary between the family and the many people who will treat the child. The family's first consultation on MR with medical people should be preceded by adequate social counseling; the family must be able to comprehend and accept the situation and they must be made aware of available government programs and services. The responsibility of doctors, social workers, and others does not stop when the child is placed in an institution; rather, it only ceases when the family demands complete autonomy. Teamwork by all who work with the MR can lead to better care for the patient and less difficulty for the family. (No refs.) - *M. Lender.*

Comite d'Etude et de Soin aux
Enfants Arrieres Profonds
3, Avenue Victoria
Paris, France

1560 SYLVESTER, EDWARD C., JR. Benefits for handicapped dependents of members of the Uniformed Services. Washington, D. C., United States Departments of Defense and Health, Education, and Welfare, 1968, 5 p.

Members of the armed forces are eligible to receive assistance from the government for the treatment of dependents who have a serious physical handicap or who are severely or moderately MR. Medical officers of various armed forces installations are equipped to assist in application for the benefits of the program. All costs but $25/month for the lowest pay grades, or $250/month for the highest officer pay grade can be paid by the program. Military commanders should become acquainted with the benefits of Public Law 89-614. (No refs.) - *M. T. Lender.*

1561 ALLEN, RICHARD C., FERSTER, ELYCE ZENOFF, & WEIHOFEN, HENRY. *Mental Impairment and Legal Incompetency*. Englewood Cliffs, New Jersey, Prentice-Hall, 1968, 401 p.

This book is a report of the Mental Competency Study which concerned a 3-year empirical research project by the George Washington University Institute of Law, Psychiatry and Criminology. The focus of this project was centered on proceedings of guardianship, adjudications of "incompetency" without appointment of a guardian, *de facto* and *de jure* "incompetency" resulting from hospitalization, and the legal determinations of competency. The effect of determinations by government agencies of the incapacity of a beneficiary to manage benefit payments is also analyzed. Eleven jurisdictions were selected for analysis as well as some data from rural communities and the state of Minnesota which has a system of state guardianship for the MR. Research design and methodology are described in detail. The appendices are extensive with 117 pages indicating detailed information on determinations of incompetency using such

factors as testamentary capacity and law suits. Legal rights such as voting, public office, drivers licensing, and marriage are also discussed. Major recommendations as a result of this study include: hospitalization should not constitute sufficient grounds for guardianship; there should be a separation of hospitalization and incompetency; if a patient is legally competent he should not be prevented from executing legal documents or using his own funds; a hearing should be required in all cases of incompetency and the alleged incompetent should be encouraged to attend and informed of his right to be represented by counsel; and an attorney should be appointed to represent the ward seeking discharge of his guardian and a final accounting should be given. Additional conclusions are summarized. (268-item bibliog.) *B. Bradley.*

CONTENTS: A Word About the Study; Introduction; The Study; Research Design and Methodology; Civil Competency; The Semantics of Incompetency; Hospitalization and Incompetency; Guardianship; Guardianship and Incompetency; State Guardianship: The Minnesota Plan; The Role of Government Agencies; The Social Security Administration; The Veterans Administration; Estate Planning; An Analysis of Estate Planning Devices to Meet the Contingency of Incompetency in the District of Columbia; and the Law of the District of Columbia in Transition.

Religion

1562 ASSOCIATION GENEVOIS DE PARENTS D'ENFANTS MENTALEMENT DEFICIENTS. *Preparex le Chemin* (Prepare the way). Lausanne, Switzerland, Agence des Ecoles du Dimanche, 1968, 48 p.

Parents, church officials, and professional educators, worked together to develop a 3-year program to teach the basics of the Catholic religion to MR children (CA 7-15 yrs; MA 4-8 yrs). A classroom apart from daily and school life which was cheerful and decorated with flowers was utilized by a team with no more than 3 children to an adult. Hand gestures and appeal to all senses helped communicate with the children. Pictures, flannel boards, films, sand, music, songs, short prayers, and readings from the Bible were used. Specific lesson plans for the first meeting each year demonstrated the need for careful planning of class sessions. To communicate the teachings of the Catholic church, religious life must also be strong in the family and community. (11 refs.) - *M. Lender.*

CONTENTS: To Know the Child; Some Teaching Methods; Presentation of the Message; The Program; Evolving Details of Some Sessions; What now; and Who is Able to Take Charge of the Instruction.

1563 GRAENING, HERBERT H. The chaplain as pastor of his congregation: Part I. *Broadcaster,* (Newsletter of the Beatrice State Home, Beatrice, Nebraska), 24(12):1-3, 1968.

Religious activities and Church responsibility to institutionalized MR have increased over the past 5 years as shown by the increasing number of chaplains in institutions for the MR. Concomitant with this increase there has been more emphasis on training clergymen for this specialized work by means of clinical courses. The chaplaincy of full campus religious activity is directed by ordained, properly trained, qualified persons. The chaplain must be ready to serve all residents and it is his duty to secure religious attention for those outside his religion. The Sunday worship service is a significant event in the life of the MR and services should be geared to the intellectual capacities of the residents with emphasis on the concrete. Bible stories and sermons related to life situations are useful. Visual aids, religious films, and film strips can also be useful. (No refs.) - *M. L. Wiltshire*

1564 GRAENING, HERBERT H. The chaplain as pastor of his congregation: Part II. *Broadcaster,* (Newsletter of the Beatrice State Home, Beatrice, Nebraska), 25(1):1-3, 1969.

Weekly services including singing, narration and slide illustrations of the Bible, prayers, and benediction are conducted in 20 of the 43 wards at the Beatrice State Home (Beatrice, Nebraska) for the MR. MRs' education in Christianity and participation in sacraments are the goals of Catholic and Protestant

volunteers who are actively involved in a weekly program which has been in effect for 9 years; however, because of variations in Protestant sacramental rituals, specific outside pastors are called upon for assistance in this area. Although the chaplain is available as a counselor to MRs, his role is somewhat passive--that of a listener, rather than an advisor--because of the delicacy involved in and the specific training required for appropriately advising MRs. (No refs.) *J. P. West.*

PARENTS AND FAMILY

1565 FOWLE, CAROLYN M. The effect of the severely mentally retarded child on his family. *American Journal of Mental Deficiency,* 73(3):468-473, 1968.

A comparison of the marital integration and sibling role tension in families in which an SMR child had been retained in the home and in families in which similar children had been placed in an institution was carried out with 2 samples of 35 families each. Parents and children in the 2 groups were matched on the basis of 5 selected variables. The measuring instruments were the Farber Index of Marital Integration and the Farber Sibling Role Tension Index. No significant difference in marital integration was found in the 2 samples; however, there was a significant difference in the role tension of the siblings, especially in that of the oldest female sibling in the family. (4 refs.) *Journal abstract.*

Lodi Unified School District
Lodi, California 95420

1566 KLABER, M. MICHAEL. Parental visits to institutionalized children. *Mental Retardation (AAMD),* 6(6):39-41, 1968.

The folklore notion that parental visits to their institutionalized retarded children is inversely related to the distance of the parental home to the residential facility was tested statistically. No such relationship was found. It was discovered, however, that parental visitation patterns show great differences between institutions. When these are related to measures of institutional effectiveness, it becomes apparent that parents will visit their children in those institutions where their offspring develop at an accelerated rate, appear to be happier and more self-sufficient. (3 refs.) - *Journal abstract.*

University of Hartford
Hartford, Connecticut

1567 KIRK, SAMUEL A., KARNES, MERLE B., & KIRK, WINIFRED D. *You and Your Retarded Child.* Second edition. Palo Alto, California, Pacific Books, 1968, 164 p. $1.50.

In order to plan intelligently for the needs of an MR child, parents should: face the handicap squarely and realistically; develop insight into their own emotional needs and those of the child; educate themselves in the area of MR; and determine the retardation level of the child. Decisions as to whether to send a child to a residential school or keep him at home should be based on a consideration of the child's level of MR and behavior, the adjustment of the family, the facilities available in the community, and the accessibility of the residential school. Parents can help an MR child to develop skills which will enable him to help himself, become more independent, learn to play and talk, develop behavior patterns which make him more acceptable to others, control his behavior, and overcome behavior problems. This book offers practical suggestions for the care and training of MR children at home as well as a plan for a total community program for the MR. It should be of interest to parents of MR children, doctors, psychologists, social workers, and educators. (No refs.) - *J. K. Wyatt.*

CONTENTS: The Parents' Problem; Levels of Mental Retardation; How Retarded Is Your Child? Should You Send Your Child to a Residential School or Keep Him at Home? Helping Your Child to Help Himself; Helping Your Child Become More Independent; Helping Your Child Play; Helping Your Child Learn to Talk; Helping Your Child Gain Acceptance; Helping Your Child Control His Behavior; Helping Your Child Overcome Behavior Problems; and A Total Program for the Retarded.

1568 NATIONAL ASSOCIATION FOR MENTAL HEALTH. *Your Mentally Handicapped Child.* London, England, 1968, 38 p. $0.72.

In order to make decisions about the care of an MR child which will encourage the child to develop his abilities and enable him to live

as full a life as possible, parents need to have a clear understanding of the nature of MR and an awareness of available consultative medical and social services. Parents should set targets of developmental achievement for an MR child which are not based on comparison with other children. They need to provide stimulation and encouragement, and to learn to adjust to the child's special needs. Carefully planned opportunities for social development, play, and learning should be provided. Schooling opportunities at junior training centers are provided for most MR children in England. The training emphasis centers around helping a child to develop his natural personality and abilities, to learn practical skills and self care in everyday matters, and to lead as independent a life as possible. This book should be of interest to parents of MR children. (27-item bibliog.) *J. K. Wyatt.*

CONTENTS: Your problems in perspective; Your baby's special difficulties; The Toddler Stage; Playing and learning; Out and about; The school to suit him best; Provisions for his future; and Some facts about mental handicap.

1569 NATIONAL ASSOCIATION FOR MENTAL HEALTH. *Your Mongol Baby.* London, England, 1968, 10 p. $0.24.

If parents are able to regard a mongoloid child simply as a family member who, in addition to his special needs, requires the same discipline and opportunities for sharing in the give-and-take of family life as other children, the possibility that the child will fit into the family and be able to give and receive love will be increased. Mongolism is caused by a chromosome abnormality and affects 1:600 babies. A mongoloid child will always be MR and should be expected to develop at about 1/3 to 1/2 the normal rate. Final intellectual development will resemble that of a 5- to 7-year-old child, and lifelong supervision of some activities will be required. Educational opportunities are provided for persons with mongolism in England at junior and adult training centers. Residential care is provided by residential training centers, hospitals, and private homes. Parents can obtain counseling on problems concerning a child with mongolism from child welfare clinics, special assessment and development clinics, mental health social workers, medical social workers, doctors, and the National Society for Mentally Handicapped Children. (11-item bibliog.) - *J. K. Wyatt.*

1570 NICHOLS, PETER. *A Day in the Death of Joe Egg.* London, England, Faber and Faber, 1967, 87 p. $2.16.

In a play the parents of a 10-year-old SMR girl employ a comedy routine and build a fantasy life in order to explain their lives and give a personality to the child. Josephine has CP, a damaged cerebral cortex, epilepsy, and is multiplegic. She lives at home and attends a day school. Her mother believes that she will improve; her father does not. Although this play deals with an exaggerated situation, its treatment of the marital strain and tension which can arise from living with a hopelessly crippled child and from the treatment and care decisions which must be made should be of interest to parents of SMRs, counselors, social workers, and physicians. (No refs.) - *J. K. Wyatt.*

1571 HARPER, MAX A. More with sorrow than with shame. *Clearing House Journal,* Issue 9(August):5-21, 1968.

Parents of MRs need help in learning to accept the child without blaming themselves, feeling shame, or having hostile feelings toward him. Secret fears that they are directly responsible for his level of functioning often causes great mental suffering; fear that institutional care may be necessary is ever present. Emotional reaction may be manifested by denial, rejection, projection of blame, overprotection, refuting the diagnosis by seeking a major remedy, or attempting to identify the conditions as something other than MR. Parent associations can help mold parental attitudes and behavior; also, frankness on the part of the parents with friends and strangers help reduce misunderstandings and social embarrassment. (No refs.) - *G. M. Nunn.*

University of Queensland
Queensland, Brisbane
Australia

1572 CEGELKA, WALTER J. *Readings in Counseling Parents of Exceptional Children.* New York, New York, Selected Academic Readings, No date, 128 p. (Price unknown)

In order to counsel effectively with parents of MRs and to aid in the rehabilitation or maximum adjustment of an MR child, counselors need to be aware of and thoroughly understand the environmental factors, parent and child factors, and social attitudes which affect each family. Counselors need to know the etiological basis for the MR as well as the degree of MR so they can assist parents in making decisions about education, care and/or institutionalization. Once counselors uncover the social pressures which complicate the care of MR children, they can work to abate confusions, mystery, and misconceptions which the parents may have. Counselors need to be aware of the extreme anxiety and frustration felt by parents when a child's retardation first becomes apparent to them and be prepared to help them become reconciled to the prolonged dependency and limited achievement potential of the child. In order to help parents adjust, counselors must evaluate the parents' strengths and weaknesses, fears and anxieties, guilts and frustrations, and help them achieve an intellectual recognition and emotional acceptance of the problem. The readings, selected from literature published from 1945 to 1965, deal with the kinds of parental counseling required for the various types of exceptional children and should be of interest to psychologists, psychiatrists, guidance personnel, teachers, vocational rehabilitators, and pediatricians. (82 refs.) *J. K. Wyatt.*

CONTENTS: Factors in Counseling Parents of Retarded Children (Begab); Hazards of the High IQ (Thom & Newell); The Underachieving Gifted Child--a Problem for Everyone (Gowan); Counseling Parents of Gifted Children (Laylock); Discovering and Meeting the Mental Health Needs of Emotionally Disturbed Elementary School Children: With Emphasis on Children Whose Parents Are Inadequate (Gordon, Berkowitz, & Cacace); Sources of Strain in the Treatment of Disturbed Children and Their Families (Rabkin); Parent Consultation (Hallowitz, Cutter, & Pikkin); Parent-Teacher Conferences and Speech-Handicapped Children (Fitzsimons); Psychotherapeutic Tools for Parents (Matis); Counseling Parents of Stuttering Children (Sander); For Parents of Very Young Deaf Children (Harris); How the Teacher of a Deaf Child Can Help the Parents (Lehman & Buchan); Emotional Disturbance--Infancy: Counseling the Family (Cerulli & Shugerman); The Blind Child as an Integral Part of the Family and Community (Lowenfeld); Parent Counseling (Telson); Development of Emotional and Social Maturity Through Counseling and Therapy (Tracht); A Program of Group Counseling for the Parents of Cerebral Palsied Children (Winder); and Counseling the Parent of the Brain-Injured Child (Barsch).

PROFESSIONAL SERVICES

1573 HUBERTS, C. W. J. Schets van een taakstelling voor de tandheelkunde m.b.t. inrichtingen van onderzoek van geestelijk of lichamelijk gehandicapte kinderen (Sketch of an approach of dentistry to the examination and treatment of institutionalized mentally and physically handicapped children). *Tijdschrift voor Zwakzinnigheid on Zwakzinnigenzorg,* 5(4):138-147, 1968.

The dentist has an important role in the examination and treatment of institutionalized MR children. His activities should include diagnosing, searching for relationships between specific dental problems and other defects, conducting etiological research, providing therapeutic advice, administering treatment, evaluating the effects of the treatment, and developing appropriate methods and instruments. (3 refs.) - *A. Huffer.*

No address

1574 BENSBERG, GERARD J., BARNETT, CHARLES D., & MENIUS, JACK A. A survey: Dental services in state residential facilities. *Mental Retardation (AAMD),* 4(1):8-13, 1966.

A survey of the dental services provided by 27 state MR institutions in 16 states in southern United States indicated that 26 full-time and 13 part-time dentists were employed and an average of 18.3% of the reisdents were seen each month (range 5.8% to 47.6%). All institutions provided amalgam restorations, 22 supplied porcelain restoration, 23 furnished full dentures, and 5 conducted routine full mouth X-rays. In the handling of uncooperative patients, 13 facilities reported they used a strap-type restraint, 7 called upon assistant help and 4 indicated greater success with drugs than with mechanical restraints. Most dentists indicated that the attendant plays an important role in the

resident's oral hygiene program and should receive appropriate training. (No refs.) *A. Huffer.*

No address

1575 STIMSON, CYRUS W. Physiatry in state institutions for the mentally retarded. *Archives of Physical Medicine and Rehabilitation,* 48(May):227-228, 1967. (Editorial)

Responses (79 out of 109) to a questionnaire distributed by a school of medicine to institutions for the MR showed that the majority of multiply handicapped residents received only "custodial care"; therefore, a campaign was launched to individualize such treatment programs to fulfill the MRs' physical, intellectual, and emotional needs. Changes over a 4-year period since distribution of the questionnaire indicate improvement in habilitative programs for institutionalized handicapped. In addition, conveniently located outpatient clinics have been established where physiatrists participate in long-range programs and offer advice in administering home therapy in moderate cases of multiple handicaps and previously institutionalized Ss. However, with moderate cases being channeled toward alternate outpatient therapy, severe cases are overwhelming in institutions, thus emphasizing the need for the "knowledge, training, and experience" of the physiatrist. (No refs.) - *J. P. West.*

1576 FELSENTHAL, HELEN. The role of the school psychologist in counseling parents of the mentally retarded. *Training School Bulletin,* 65(1):29-35, 1968.

This review of literature delineates the problems faced by families of the mentally retarded. Parents of mentally retarded children can derive much benefit from counseling if a school psychologist is able to anticipate some of their questions. Although little research has been completed in this area, some information is available concerning the family's response to mental retardation. Counseling usually needed in various situations, including group counseling, is discussed. (24 refs.) - *Journal abstract.*

No address

1577 AMERICAN PSYCHIATRIC ASSOCIATION. REHABILITATION COMMITTEE. *The Psychiatrist's Role in Rehabilitating the Mentally Disabled.* Brooks, George W., & Boag, T. J., eds. Washington, D. C., Vocational Rehabilitation Administration, 1967, 74 p.

In order to prepare a document which would enable local groups to establish workshops on the involvement of psychiatrists in vocational rehabilitation programs, a national workshop was held in Stowe, Vermont, in May 1964. Small discussion groups highlighted the theme of personal contact and friendly relationships between 2 professions largely unknown to each other. Topics included financial arrangements, the team approach, relationships, consultation, and especially the education of the psychiatrist to the role of counselor and the education of the counselor to the role of psychiatrist. This handbook outlines the planning essential to such a workshop, suggests suitable topics and leading questions for discussion, and highlights successful conferences and state programs. Psychiatrists, general physicians, and vocational counselors interested in the total program for the treatment and rehabilitation of the mentally ill or retarded patient might consider a workshop adapted to local or regional problems in this neglected area of patient care. (No refs.) - *E. L. Rowan.*

CONTENTS: Early Preparation; State-Federal Vocational Rehabilitation Program and the Practicing Psychiatrist (Frost); Reports of Discussion Groups; Overview; List of Participants; Suggestions for Planning Committee Based on San Francisco Workshop (Grossman); Report of Workshop, "Rehabilitation and Psychiatry" (Grossman); Heart of the Matter: Physician-Counselor Relationships (Cubelli); Public Agency Consultations (Power); and Questionnaire on Psychiatric Fees.

1578 FROST, DAVID. State-federal vocational rehabilitation program and the practicing psychiatrist. In: American Psychiatric Association. Rehabilitation Committee. *The Psychiatrist's Role in Rehabilitating the Mentally Disabled.* Brooks, George W., & Boag, T. J., eds. Washington, D. C., Vocational Rehabilitation Administration, 1967, p. 9-16.

The Vocational Rehabilitation Administration hopes to promote a better understanding between psychiatry and rehabilitation in approaching the psychosocial aspects of patients' problems. Since these disciplines share a functional approach, the "team" philosophy, and a wish to develop patients'

abilities, they should work closely in bridging the gap between the hospital and the community. Public Law 565 (1954) which provided for expansion and training of vocational staffs and the Hill-Burton Act which aided in construction of rehabilitation facilities created a need for psychiatric consultation at all administrative levels. As an examining physician, consultant, advisor about staff problems, and advisor of policy, the psychiatrist works closely with state agencies. The vocational counselor evaluates and prepares a patient for employment and placement commensurate with his abilities. As psychiatric and rehabilitation workers become more involved with each other, their sphere of influence will come to include other fields such as alcoholism and MR. (No refs.) *E. L. Rowan.*

1579 CUBELLI, GERALD E. The heart of the matter: Physician-counselor relationships. In: American Psychiatric Association. Rehabilitation Committee. *The Psychiatrist's Role in Rehabilitating the Mentally Disabled.* Brooks, George W., & Boag, T. J., eds. Washington, D. C., Vocational Rehabilitation Administration, 1967, p. 60-67.

A strong working relationship between the responsible physician and vocational counselor is essential in providing continuity of patient care, making optimal use of community resources, and stimulating motivating personal, clinical, and financial forces. Because of recent expansion of vocational rehabilitation agencies to include the mentally ill patient, psychiatrist-counselor relations have become exceedingly important. Neither party has a clear understanding of the role of the other and the need for mutual education is acute. The independent physician treating on the basis of need may be at odds with the counselor working within agency structure and limited by eligibility requirements and the feasibility of success. While the psychotherapeutic goal may be to have the patient assume responsibility for his own rehabilitation, the counselor routinely depends on medical or psychiatric cooperation. Fear and anxiety of initiating contact with a psychiatrist may reflect the degree of personal insecurity of the counselor. The patient's prognosis in rehabilitation depends not upon the quantity of individual effort but upon the degree of cooperation between these 2 professionals. (No refs.) - *E. L. Rowan.*

1580 GROSSMAN, MAURICE. Symposium and workshop, "Rehabilitation and Psychiatry." In: American Psychiatric Association. Rehabilitation Committee. *The Psychiatrist's Role in Rehabilitating the Mentally Disabled.* Brooks, George W., & Boag, T. J., eds., Washington, D. C., Vocational Rehabilitation Administration, 1967, p. 54-59.

The first workshop in interdisciplinary cooperation between psychiatry and rehabilitation was held in San Francisco, California, in September 1963. Attempts were made to clarify mutual misunderstandings about rehabilitation workers and practicing psychiatrists. The traditional nondirective psychotherapeutic approach to treatment is different from the social and economic involvement of rehabilitation but has the same goal of patient self-sufficiency. Proper psychiatric evaluation requires cooperation between the agency personnel requesting such examination and the psychiatrist. The most effective "team" approach requires that authority be shifted as the most important problem changes. Participants were encouraged to spread the spirit of cooperation through their local branches and stage agencies and develop this spirit in psychiatrists and rehabilitation workers in training. (No refs.) - *E. L. Rowan.*

1581 POWER, F. RAY. Public agency consultations. In: American Psychiatric Association. Rehabilitation Committee. *The Psychiatrist's Role in Rehabilitating the Mentally Disabled.* Brooks, George W., & Boag, T. J., eds., Washington, D. C., Vocational Rehabilitation Administration, 1967, p. 68-72.

The program of vocational rehabilitation in the state of West Virginia points up the special problems that psychiatric rehabilitation poses to the state agency and the need of the agency for psychiatric consultation at all administrative levels. The field counselor requires consultation on his casework problems, such as determining eligibility, planning services, and dealing with special situations. Rehabilitation centers in the state hospitals and residence facilities for the MR require close integration with the hospital treatment program. Consultation to the state rehabilitation center, where 35% of the clients are mentally ill or retarded, requires patient evaluation for selection and termination in the program and help with adjustment problems of patients and staff. In an evolving state program, psychiatric consultation progresses from planning to staff training to operations and program interpretation. The psychiatrist

must view the rehabilitation program as part of the treatment process and consultation as a means of extending his skill and knowledge to a greater number of patients. (No refs.) *E. L. Rowan.*

1582 SHAPIRO, DAVIS S., MAHOLICK, LEONARD T., BREWER, EARL D. C., & ROBERTSON, RICHARD N. *The Mental Health Counselor in the Community: Training of Physicians and Ministers.* Springfield, Illinois, Charles C. Thomas, 1968, 207 p. $12.75.

The objectives of a 3-year mental health training demonstration project at the Bradley Center, Muscogee County, Georgia, were: to help ministers and physicians to think systematically and comprehensively about human behavior; to provide them with practical personal data collection tools and with the skills necessary to administer, analyze, and evaluate them; and to teach them to plan for remedial services either through the use of their counseling skills or through the use of a referral source. Analyses of the effects of training which used opinion and self-report measures revealed that profound, deep-seated changes in practice or viewpoint were not effected, although some significant and positive changes appeared to have taken place. Future programs of this type should (1) have clear cut intentions and objectives based on the trainee's needs and professional functions, (2) have a clearly stated point of view about human behavior and functioning that is related to the training goals, (3) employ standardized teaching processes and methods, (4) provide standardized consultation procedures, (5) teach easily applied methods and approaches, and (6) include provisions for evaluation. Mental health specialists, community psychiatrists and psychologists, physicians, and ministers will find the research data in this book of interest. (No refs.) - *J. K. Wyatt.*

CONTENTS: A Project and a Point of View; A Mental Health Training Package; The Intent and Design of the Project; Entering New Communities; Training of Physicians; Training of Ministers; Evaluating Mental Health Programs: A Point of View and Two Designs; Sound Evaluation for the Future; Evaluating Changes of Case Management Practices and Attitudes: A Feasibility Study; Measuring Impact upon Civic and Professional Leadership: An Exploratory Study; The People Whom the Physicians and Ministers Counseled; and Some Issues and Opinions.

1583 KRAFT, IRVIN A., & BRATTENG, ELIZABETH. Behavioral pediatrics: Principles and practice. *Texas Medicine,* 64(8):44-47, 1968.

Behavioral pediatrics utilizes standard medical and psychological techniques to treat children with developmental and behavioral difficulties and to help their families. With this approach, a physician can evolve a model in which he analyzes the child's deviant behavior and development in terms of the total family pattern. The critical factor is the physician-patient relationship which is based on an understanding and appreciation of the basic forces operating within the family. The essential skills are specialized techniques of interviewing and history taking. After the faulty family interaction patterns have been ascertained, appropriate environmental resources (medicine, education, recreation, and religion) are selected to aid in the modification of the child's and family's world. (No refs.) - *A. Huffer.*

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1584 JAMESON, MARIE L. What does the doctor do? *Clearing House Journal,* Issue 7 (September):11-15, 1967.

The physician in a center for MR is in a pivotal role with the MR child, his parents, and the center's staff. His responsibility to the child is regular medical examinations and treatment when necessary. His responsibility to the parents includes discussion of the child's diagnosis and provision of moral support. To the center's staff, his responsibility is the dissemination of the medical aspects of MR and the recognition of the staff as members of the treatment team. (No refs.) - *M. L. Wiltshire.*

No address

1585 TOMKIEWICZ, S. Le medecin et les parents de l'enfant arriere (The physician and parents of the retarded child). *La Medecine Infantile,* 75(4):301-305, 1968.

Parents and physician must communicate on an adult level if he is to judge the tolerance of the parent for the MR offspring. The physician, who is in the position to evaluate the parents, must determine, with the parents, whether a child should enter an institution.

Although tolerance cannot be measured quantitatively, objective, subjective, and modifiable factors may be used to judge tolerance. Objective factors include socio-cultural problems, family, and etiology of MR. Subjective factors are the history of the parents and their behavior. Modifiable factors include social myths, stereotypes, guilt feelings, and parental loneliness. A systematic method of measuring tolerance is necessary. (No refs.) - *M. Lender.*

No address

1586 LENKOWSKY, RONALD S., & BLACKMAN, LEONARD S. The effect of teachers' knowledge of race and social class on their judgments of children's academic competence and social acceptability. *Mental Retardation (AAMD)*, 6(6):15-17, 1968.

This study, an extension of an earlier work by Bergan and Smith, explored whether knowledge of children's race and socioeconomic status biases teacher judgments as they relate to the abilities of the MR. Ratings of hypothetical MR children on social acceptability were found to be affected significantly by knowledge of socioeconomic standing. The implications of this finding, in terms of teacher referral for special class placement of predominantly lower social class children, are discussed. (10 refs.) - *Journal abstract.*

No address

1587 YOUNIE, WILLIAM J. A tentative description of the school-work study teacher of the mentally retarded. *Mental Retardation (AAMD)*, 6(5):15-19, 1968.

A rather brief look at a relatively small group of school-work study teachers of the retarded reveals that although they are quite similar to other secondary school teachers in terms of characteristics, they do report a number of unique and difficult problems. These problems are related to poor public attitudes toward the retarded and to inadequate preparation and supervision of school-work study teachers. The characteristics, problems, and suggestions presented by the school-work-study teachers upon which this report is based cannot be said positively to be representative of their own or any other geographic region. The experience gained with this group does suggest that school-work study teachers do have important information to give to those interested in improving pre-service and in-service programs of teacher preparation. This information should be sought systematically. It should be carefully evaluated. And it should be used to improve the level of those teachers so urgently needed to bridge effectively the gap which exists between the retarded student's school and work world. (10 refs.) - *Journal summary.*

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1588 GEDDES, DOLORES. The physical educator as a member of the special physical education team. In: Project on Recreation and Fitness for the Mentally Retarded. *Programing for the Mentally Retarded* (Report of a National Conference, October 31-November 2, 1966). Washington, D. C., American Association for Health, Physical Education, and Recreation, 1968, p. 27-29.

"Project Breakthrough," the physical education program for MRs in the Boulder Valley Public Schools, Boulder, Colorado, was developed by a team of professionals, each of whom contributed information on the effects of physical and recreational activities on the total growth and development of an MR child. The project team is composed of physical educators, special educators, administrators, principals, school psychologists, social workers, nurses, a project advisory committee, members of the city recreation department, representatives from the Colorado Department of Education, and faculty of Colorado State College and the University of Colorado. The teaching objectives of the physical education program center around the reinforcement of the special class learning process and the use of physical activities to enhance individual social, emotional physical, and intellectual education and development. The Colorado Department of Education has been actively involved in "Project Breakthrough" and has provided information concerning state requirements in special education, consultation services, state funds, and approval for the use of Title I funds. (No refs.) - *J. K. Wyatt.*

1589 CLOPPER, DONALD LEE. In-service instruction for residential teachers of the mentally retarded. *Dissertation Abstracts*, 67(11,A):3753, 1967.

An in-service education program for teachers in an institutional setting effected a positive change among the staff--increased cooperative effort and a closer relationship with the administration. The 2-hour, once-a-week sessions (continued for 28 wks) included topics on: classroom discipline; teaching methods; educational philosophy, placement, and programing; institutional relationships; and education's role in rehabilitation. (No refs.) - *A. Huffer.*

No address

1590 COLE, NORMAN. The role of the special class teacher in school-work experience programs. In: Ayres, George E., ed. *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Mankato, Minnesota, Mankato State College, 1967, p. 29-39.

Special class teachers in school-work experience programs should understand the world of work, be experts on the varied services provided by community agencies which may be used by students, be experts on child growth and development, and be able to communicate information. The essential elements of the Minnesota School Habilitation Program, a new program for students who have had chronic difficulty with academic material are community job placement, the manufacture of useful products by academically and mentally retarded students, a high ratio of professional persons to teach young adults about jobs, practical information about occupations, and a highly sophisticated educational program based on individualized instruction. Secondary curricula provide data on occupations, personal hygiene, use of leisure time, the fine arts field, useful mathematics, and individual student electives. Counseling and interview opportunities as well as rotating work assignments are used to help the students select the type of work they desire for their permanent work assignments. (No refs.) *J. K. Wyatt.*

1591 CROW, WILLIS. The role of the vocational adjustment coordinator in school-work experience programs. In: Ayres, George E., ed. *Symposium on Habilitating the Mentally Retarded*, held at Mankato State College, Mankato, Minnesota, February 11, 1967. Mankato, Minnesota, Mankato State College, 1967, p. 40-43.

The role of the vocational adjustment counselor (VAC) varies with each work-experience program because of differences in communities, the professional backgrounds of VACs, and the individuals with whom the VACs work. Students are referred to the school-work experience programs in the Windom, Minnesota Public Schools at the end of their freshman year. Referral is made by a special education teacher, a counselor, or a superintendent. Most students are near the age of 16 years at the time of referral. In order to be eligible for VAC services a student must have a physical or mental disability which constitutes a vocational handicap, and there must be some expectation that the services will be beneficial and enable the student to be employable. (No refs.) - *J. K. Wyatt.*

1592 MULLER, MOLLIE. A new service for teachers in Queensland. *Clearing House Journal*, Issue 7 (September):8-10, 1967.

The Queensland Teachers and Supervisors of Handicapped Children Union of Employees became a registered union in November, 1965. Its objectives include: advance the education, training, and welfare of handicapped children; secure adequate salaries and working conditions; establish and maintain high professional ethics; and maintain an information service regarding ways to solve problems that teachers face. (No refs.) - *G. M. Nunn.*

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1593 PERRY, HAROLD W., & MORRIS, THANN (MRS.). The special education placement specialist: A new image in special education personnel. *Journal of Learning Disabilities*, 1(12):739-741, 1968.

Placement of the MR into special class is facilitated through the use of a placement specialist who "bridges the gap" between school psychologist, teacher, parents, and child. In conference, relevant information is considered and a profile of the individual's strengths and weaknesses is drawn up.

Parental cooperation with the school's plan is elicited; principal and special class teacher are consulted and familiarized with the data. Efforts are made to effect as smooth transition as possible for the child to the special class. (No refs.) - *M. L. Wiltshire.*

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1594 HUME, MARGUERITE, ed. *Mental Retardation: A New Dimension in Social Work Education.* Louisville, Kentucky, University of Louisville, Kent School of Social Work, 1967, 84 p. (Price unknown)

This contains 4 papers presented at an institute sponsored by the University of Louisville, Kent School of Social Work in March, 1967. The content deals with the problems confronting professional education in all areas and specifically with the curriculum in social work. A very general and broad approach to social work education is advocated because it qualifies the student to work in many diverse areas. In schools of social work at UCLA and the University of Wisconsin, it has been found that field experience in MR agencies gives the student this broad base. (No refs.) - *K. B. Brown.*

CONTENTS: Introduction (White); New Patterns in Education for the Professions (McGlothin); Issues in Social Work Education Affecting the Teaching of Mental Retardation Content: Part I (Smith), Part II (Bertrand); Selected List of Other Teaching Materials Regarding Mental Retardation for Faculty of Schools of Social Work (Schreiber).

1595 McGLOTHIN, WILLIAM J. New patterns in education for the professions. In: Hume, Marguerite, ed. *Mental Retardation: A New Dimension in Social Work Education.* Louisville, Kentucky, University of Louisville, Kent School of Social Work, 1967, p. 15-25.

Because a professional needs more than competence in his field, the trend in education now is toward theoretical learning. Consequently, many professional schools are now requiring a more "in depth" study of the arts and sciences and a more general approach to the professional sciences. The education is, thus, theoretical and can be applied more diversely, which is essential in today's world. For example, mental retardation is now being taught in social work education because so many diverse aspects of social work may be found in mental retardation. (No refs.) - *K. B. Brown.*

1596 SMITH, WINIFRED E. Issues in social work education affecting the teaching of mental retardation content: Part I. In: Hume, Marguerite, ed. *Mental Retardation: A New Dimension in Social Work Education.* Louisville, Kentucky, University of Louisville, Kent School of Social Work, 1967, p. 27-41.

At UCLA changes which have been found extremely effective have been made in the curriculum of social work. When students are assigned to their field work, they are often placed in MR agencies. It has been found that in these agencies the students deal with diverse forms of social problems, the agencies being microcosms of all social problems. In the MR agencies students are able to use their social work skills, knowledge, and values; they are given the opportunity to apply their casework, group work, and community organization skills; they can study new patterns of service; they are confronted with the problems which exist in all facets of the retardate's life: they deal with all strata of society; they examine their profession, their professional attitudes, and the attitudes of society; and they develop new perspectives on many social work concept. (No refs.) - *K. B. Brown.*

1597 BERTRAND, PATRICIA TATE. Issues in social work education affecting the teaching of mental retardation content: Part II. In: Hume, Marguerite, ed. *Mental Retardation: A New Dimension in Social Work Education.* Louisville, Kentucky, University of Louisville, Kent School of Social Work, 1967, p. 43-58.

At the University of Wisconsin School of Social Work, the MR program has 4 field courses and a seminar. The field courses include multi-methods which deal with the direct service aspect (group counseling, state associations, day care programs), indirect methods which emphasize consultation experiences and problem areas. During the field service experience, the student attends a seminar. The approach to the field courses is generic. (No refs.) - *K. B. Brown.*

PUBLICATIONS SCANNED

The following publications are scanned regularly for articles pertinent to mental retardation.

AAUP Bulletin
ACLD Items of Interest (Association for Children with Learning Disabilities)
ACT (American College Testing Program) Research Reports
AIA (Architectural Institute of America)
ALA Bulletin (American Library Association)
ASHA: A Journal of the American Speech & Hearing Association
AV (Audio-Visual) Communication Review
Academic Therapy Quarterly
Acta Anatomica
Acta Biologiae Experimentalis
Acta Chirurgiae Plasticae
Acta Endocrinologica
Acta Geneticae Medicae et Gemellologiae
Acta Genetica et Statistica Medica
Acta Haematologica
Acta Medica Scandinavica
Acta Morphologica
Acta Neurochirurgica
Acta Neurologica et Psychiatrica Belgica
Acta Neurologica Scandinavica
Acta Neuropathologica
Acta Obstetricia et Gynecologia Scandinavica
Acta Ophthalmologica
Acta Oto-Laryngologica
Acta Paediatrica Belgica
Acta Paediatrica Scandinavica
Acta Paedopsychiatrica
Acta Pathologica et Microbiologica Scandinavica
Acta Physiologica Latino Americana
Acta Physiologica Polonica
Acta Psiquiatrica y Psicologica de America Latina
Acta Psychiatrica Scandinavica
Acta Psychologica, Amsterdam
Activitas Nervosa Superior
Administrative Science Quarterly
Adolescence
Adult Education
Adult Leadership
Aerospace Medicine
Aerzliche Forschung
Agricultural Education Magazine
Alberta Journal of Educational Research
Alberta Psychologist
Amentia
America Latina, Brazil
American Annals of the Deaf
American Anthropologist
American Association for Health, Physical Education, and Recreation Research Quarterly
American Association of Colleges for Teacher Education Yearbook
American Association of School Administrators Official Report
American Behavioral Scientist
American Biology Teacher
American Child
American Corrective Therapy Journal
American Council on Industrial Arts Teacher Education Yearbook
American Ecclesiastical Review
American Education
American Educational Research Journal
American Foundation for the Blind, Research Bulletin
American Heart Journal
American Institute of Architects Journal
American Journal of Cardiology

American Journal of Clinical Hypnosis
American Journal of Clinical Pathology
American Journal of Digestive Diseases
American Journal of Epidemiology
American Journal of Human Genetics
American Journal of Medical Sciences
American Journal of Medicine
American Journal of Mental Deficiency
American Journal of Nursing
American Journal of Obstetrics and Gynecology
American Journal of Occupational Therapy
American Journal of Ophthalmology
American Journal of Optometry & Archives of American Academy of Optometry
American Journal of Orthodontics
American Journal of Orthopsychiatry
American Journal of Pathology
American Journal of Physical Medicine
American Journal of Physiology
American Journal of Proctology
American Journal of Psychiatry
American Journal of Psychoanalysis
American Journal of Psychology
American Journal of Psychotherapy
American Journal of Public Health
American Journal of Roentgenology
American Journal of Roentgenology, Radium Therapy, and Nuclear Medicine
American Journal of Sociology
American Journal of Surgery
American Journal of Tropical Medicine and Hygiene
American Music Teacher
American Psychologist
American Review of Respiratory Diseases
American School & University
American School Board Journal
American Sociological Review
American Sociologist
American Surgeon
American Vocational Journal
Anaesthesia
Analyse et Prevision, France
Anatomical Record
Andover Newton Quarterly
Anesthesia and Analgesia: Current Researches
Anesthesia Progress
Anesthesiology
Angiology
Anglican Theological Review
Animal Behavior
Annales d'Endocrinologie
Annales de Genetique
Annales Medico-Psychologiques
Annales Paediatriae Fenniae
Annales de Pediatrie
Annali Sociologia, Italy
Annals Institute de Pasteur, Paris
Annals of Allergy
Annals of Human Genetics
Annals of Internal Medicine
Annals of Surgery
Annals of the New York Academy of Sciences
Annals of Rheumatic Diseases
Annals of Thoracic Surgery
Annee Psychologique
Annual of Animal Psychology, Tokyo
Antibiotiki
Antioch Review
Architects' Exchange
Architectural Forum
Architectural Record
Architectural Review
Archives Francaises de Pediatrie
Archives Italiennes de Biologie
Archives of Biochemistry and Biophysics
Archives of Dermatology
Archives of Disease in Childhood
Archives of Environmental Health
Archives of General Psychiatry
Archives of Internal Medicine
Archives of Neurology
Archives of Ophthalmology
Archives of Otolaryngology
Archives of Pathology
Archives of Physical Medicine
Archives of Surgery
Archive fur die gesamte Psychologie
Archiv fur Geschwulstforschung
Archiv fur Kinderheilkunde
Archiv fur klinische und experimentelle Ohren-Nasen-und Kehlkopfheilkunde
Archive fur Psychiatrie und Nervenkrankheiten
Archivio di Psicologia, Neurologia e Psichiatria
Archivos de Crimonologia, Neuropsiquiatria y Disciplinas Conexas
Arhiv za Higijenu Rada i Toksikologiju
Arithmetic Teacher
Arizona Teacher
Art Education
Arthritis and Rheumatism
Arts and Activities
Association for Student Teaching Yearbook
Association for Supervision and Curriculum Development Yearbook
Athletic Journal
Audiovisual Instruction
Australasian Annals of Medicine
Australian Children Limited
Australian Journal of Experimental Biology and Medical Science
Australian Journal of Psychology
Australian Paediatric Journal

BINOP: Bulletin de l'Institut National d'Etude du Travail et d'Orientation Professionnelle
Balance Sheet
Behavior
Behavioral Science
Behavior Research & Therapy
Biochemical and Biophysical Research Communications
Biochemical Journal
Biochemical Medicine

Biochemistry
Biochimica et Biophysica Acta, Amsterdam
Biofizika
Biologia Neonatorum
Biomedical Engineering, London
Biometrics
Birth Defects Original Article Series
Blood
Blut
Boletin Informativo (Instituto Nacional de Psiquiatria Infantil)
Boletin Informativo del Instituto Neurologico de Guatemala
Brain
Brain Research
British Heart Journal
British Journal for the Philosophy of Science
British Journal of Clinical Practice
British Journal of Criminology
British Journal of Dermatology
British Journal of Educational Psychology
British Journal of Educational Studies
British Journal of Industrial Medicine
British Journal of Medical Psychology
British Journal of Ophthalmology
British Journal of Pharmacology
British Journal of Preventive and Social Medicine
British Journal of Psychiatric Social Work
British Journal of Psychiatry
British Journal of Psychology
British Journal of Radiology
British Journal of Social and Clinical Psychology
British Journal of Surgery
British Medical Journal
Broadcaster (Newsletter of the Beatrice State Home, Beatrice, Nebraska)
Bulletin (Council of Social & Psychological Research, Calcutta)
Bulletin de l'Association Internationale de Psychologie Appliquee
Bulletin de Psychologie Scolaire et de'Orientation
Bulletin du C.E.R.P.
Bulletin of Suicidology
Bulletin of the British Psychological Society
Bulletin of the Dental Guidance Council for Cerebral Palsy
Bulletin of the Los Angeles Neurological Society
Bulletin of the Maritime Psychological Association
Bulletin of the Menninger Clinic
Bulletin of the National Association of Secondary School Principals
Bulletin of the New York Academy of Medicine
Bulletin of the School of Education (Indiana U.)
Bulletin of Tokyo Dental College
Business Education Forum
Business Education World
Byulletin' Eksperimental' noi Biologii i Meditsiny
CTA (California Teachers Association) Journal
Cahiers de Psychologie
Cahiers de Sociologie Economique
California Education
California Elementary School Administrators Association Monographs
California Journal of Educational Research
California Mental Health Research Digest
California Medicine
Canada's Mental Health
Canada's Mental Health Supplement
Canadian Anaesthetists' Society Journal
Canadian Education and Research Digest
Canadian Journal of Biochemistry
Canadian Journal of Physiology & Pharmacology
Canadian Journal of Psychology
Canadian Journal of Surgery
Canadian Journal of Theology
Canadian Medical Association Journal
Canadian Nurse
Canadian Psychiatric Association Journal
Canadian Psychologist
Canadian Review of Sociology and Anthropology
Cancer
Cancer Research
Cardiovascular Research
Casopis Lekaru Ceskych
Catholic Charities Review
Catholic Educational Review
Catholic Psychological Record
Catholic School Journal
Centro Ricerche Biopsichiche
Ceskoslovenska Psychiatrie
Ceskoslovenska Psychologie
Character Potential
Cheshire Smile
Child & Family
Child Development
Child Development Abstracts and Bibliography
Childhood Education
Children
Children Limited
Children's House
Child Study
Child Study Center Bulletin (State University Coll. New York, Buffalo)
Chirurg
Christianity and Crisis
Christianity Today
Christian Scholar
Circulation
Circulation Research
Claremont Reading Conference Yearbook
Classical Journal
Clearing House
Clearing House Journal
Clergy Review
Clinica Chimica Acta
Clinical and Experimental Immunology
Clinical Chemistry
Clinical Pediatrics
Clinical Pharmacology & Therapeutics

Clinical Proceedings of Children's Hospital of the District of Columbia
Clover Leaves-Observer
College and University
College English
College Student Survey
Color Engineering
Community Health
Community Mental Health Journal
Comparative Education Review
Comprehensive Psychiatry
Concordia Historical Institute Quarterly
Conditional Reflex
Conference on Reading (University of Chicago)
Confina Neurologica
Confina Psychiatrica
Connecticut Health Bulletin
Contemporary Education
Contemporary Psychoanalysis
Contributi dell'Instituto di Psicologia
Cornell Journal of Social Relations
Corrective Psychiatry & Journal of Social Therapy
Cortex
Council for Research in Music Education
Counselor Education & Supervision
Courrier
Crime & Delinquency
Current Contents: Life Sciences
Current Therapeutic Research
Cytogenetics

DSH Abstracts
Dapim Refuiim
Defence Science Journal
Delaware Association for Retarded Children--News
Der Landarzt
Deutsche Medizinische Wochenschrift
Deutsches Aerzteblatt
Deutsche Zeitschrift fur Nervenheilkunde
Developmental Medicine and Child Neurology
Developmental Psychology
Diabetes
Diabetologia
Diagnostica: Zeitschrift fur Psychologische Diagnostik
Didakometry
Die Medizinishe
Die Rehabilitation
Difesa Sociale
Digest of the Mentally Retarded
Diseases of the Chest
Diseases of the Colon and Rectum
Diseases of the Nervous System
Dissertation Abstracts
Doklady Akademii Nauk SSSR
Doshkol' noe Vospitanie

ETC: A Review of General Semantics
Economic Development and Cultural Change
Education
Educational & Psychological Interactions
Educational & Psychological Measurement
Educational Forum
Educational Leadership
Educational Record
Educational Records Bureau Bulletins
Educational Research (British)
Educational Screen AV (Audio-Visual) Guide
Educational Theatre Journal
Educational Theory
Education & Psychology Review
Education & Training of the Mentally Retarded
Education Digest
Education Index
Ek'sperimental ev Klinikakan Bzhshkowt'yan Handes
Electroencephalography & Clinical Neurophysiology
Elementary English
Elementary School Guidance & Counseling
Elementary School Journal
Encephale
Encounter
Endocrinology
Enfance
English Journal
English Language Teaching
Environmental Research
Epilepsia
Ergonomics
Eugenics Quarterly
Eugenics Review
Evangelische Theologie, Germany
Evolution Psychiatrique
Exceptional Children
Excerpta Criminologica
Experientia
Experimental Neurology
Explorations in Entrepreneurial History
Expository Times
Eye, Ear, Nose and Throat Monthly

Family Care Newsletter
Family Law Quarterly
Family Life Coordinator
Family Process
Farmakologiya i Toksikologiya
Federation Proceedings
Fertility and Sterility
Fiziologicheskii Zhurnal SSSR
Flight Safety
Forecast for Home Economics
Fortschritte auf dem Gebiete der Rotgenstrahlen und der Nuklearmedizin
Forum
Forward Trends
Foundations
France Medicale
Free University Quarterly, Holland
French Review

GAP (Group for the Advancement of Psychiatry) Report
Gastroenterology
Gastrointestinal Endoscopy
Gawein
Geburtshilfe und Frauenheilkunde
General Practice
Genetic Psychology Monographs
Genetika
Geriatrics
German Medical Monthly
German Quarterly
Gerontologia
Gerontologia Clinica
Gerontologist
Gifted Child Quarterly
Gordon Review
Grade Teacher
Graduate Research in Education & Related Disciplines
Group Psychotherapy
Gynaecologia
Gynakologe

Hachinuch
Harefuah
Harvard Educational Review
Harvard Theological Review
Headache
Health, Education & Welfare Indicators
Health Laboratory Science
Heilpadagogische Forschung
Heilpadagogische Werkblatter
Helvetica Paediatrica Acta
Hereditas
Hibbert Journal
High Points
High School Journal
Hispania
History of Education Quarterly
History of Religions
Hjertebladet
Homiletic and Pastoral Review
Hommes et Techniques
Hospital and Community Psychiatry
Hospital Practice
Hospital (Rio de Janiero)
Hospitals
Human Biology: An International Record of Research
Human Development
Human Factors
Humangenetik
Human Relations
HumRRO Professional Paper
HumRRO Technical Report
Hygiene Mentale

ICRH (Information Center, Recreation for the Handicapped) Newsletter
IEEE Transactions on Human Factors in Electronics
IMRID (Institute on Mental Retardation and Intellectual Development) Papers and Reports
Illinois Education
Illinois Medical Journal
Illinois Schools Journal
Immunology
Impact of Science on Society
Improving College and University Teaching
Indian Educational Review
Indian Journal of Extension Education
Indian Journal of Mental Retardation
Indian Journal of Psychology
Indian Journal of Social Work
Indian Journal of Theology
Indian Psychological Review
Individual Psychologist
Industrial Arts and Vocational Education/Technical Education
Industrial Relations
Infanzia Anormale
Information Psychologique
Insight: Quarterly Review of Religion & Mental Health
Institute of Dream Research Monograph Series
Instructor
International Archives of Allergy and Applied Immunology
International Bureau of Education Bulletin
International Child Welfare Review
Internationales Archiv fur Gewerbepathologie und Gewerbehygiene
International Journal for the Education of the Blind
International Journal of Clinical & Experimental Hypnosis
International Journal of Fertility
International Journal of Group Psychotherapy
International Journal of Neuropharmacology
International Journal of Neuropsychiatry
International Journal of Parapsychology
International Journal of Psychiatry
International Journal of Psycho-Analysis
International Journal of Psychology
International Journal of Radiation Biology
International Journal of Social Psychiatry
International Journal of Sociometry & Sociatry
International Nursing Review
International Pharmacopsychiatry
International Rehabilitation Review
International Review of Education
International Review of Missions
International Social Science Journal
International Yearbook of Education
Irish Journal of Medical Science
Israel Annals of Psychiatry & Related Disciplines
Israel Annals of Psychology and Related Disciplines
Israel Journal of Medical Sciences

Japanese Journal of Child Psychiatry
Japanese Journal of Educational Psychology
Japanese Journal of Experimental Medicine
Japanese Journal of Human Genetics
Japanese Journal of Medical Science and Biology
Japanese Journal of Pharmacology
Japanese Psychological Research
Jewish Education
Jewish Parent
Jewish Social Studies
Johns Hopkins Medical Journal
Journal de Chirurgie
Journal de Physiologie
Journal de Psychologie Normale et Pathologique
Journal for Social Research
Journal for the Scientific Study of Religion
Journalism Quarterly
Journal of Abnormal Psychology
Journal of Aesthetics & Art Criticism
Journal of Air Pollution Control Association
Journal of Allergy
Journal of Analytical Psychology
Journal of Applied Behavioral Science
Journal of Applied Behavior Analysis
Journal of Applied Physiology
Journal of Applied Psychology
Journal of Asthma Research
Journal of Auditory Research
Journal of Bacteriology
Journal of Biological Psychology
Journal of Bone and Joint Surgery
Journal of Business Education
Journal of Cell Biology
Journal of Chemical Education
Journal of Child Psychology & Psychiatry & Allied Disciplines
Journal of Church and State
Journal of Clinical Endocrinology
Journal of Clinical Endocrinology & Metabolism
Journal of Clinical Investigation
Journal of Clinical Pharmacology
Jouranl of Clinical Psychology
Journal of College Placement
Journal of Communication
Journal of Communication Disorders
Journal of Comparative and Physiological Psychology
Journal of Conflict Resolution
Journal of Consulting and Clinical Psychology
Journal of Counseling Psychology
Journal of Creative Behavior
Journal of Criminal Law, Criminology & Police Science
Journal of Dentistry for Children
Journal of Ecclesiastical History
Journal of Education
Journal of Educational Measurement
Journal of Educational Psychology
Journal of Educational Research
Journal of Emotional Education
Journal of Endocrinology
Journal of Engineering Psychology
Journal of Existentialism
Journal of Experimental Education
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Kansas Studies in Education (Kansas U.)
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Khirurgiia, Moscow
Kleine Fachbuchreihe (Kuratorium fur Verkehrssicherheit, Vienna)
Klinische Medizin, Vienna
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LTSH Observer (Lynchburg Training School and Hospital)
Laboratory Investigation
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Medizinische Welt, Stuttgart

Megamot
Menninger Quarterly
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Mental Health (National Association for Mental Health, London)
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Middle States Association of Colleges and Secondary Schools Proceedings
Milbank Memorial Fund Quarterly
Military Medicine
Mind Over Matter
Minerva Medica
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Minerva Pediatrica, Turin
Minnesota Journal of Education
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Missouri Journal of Research in Music Education
Modern Language Journal
Monographies Francaises de Psychologie
Monographs of the Society for Research in Child Development
Montana Education
Motive
Multivariate Behavioral Research
Multivariate Behavioral Research Monographs
Munchener Medizinische Wochenschrift, Munich
Music Educators Journal
Music Journal
Muslim World
Muzika, Rumania

NCEA (National Catholic Educational Association) Bulletin
NEA (National Educational Association) Research Bulletin
NEA (National Education Association) Journal
Nachal'naya Shkola
National Association of Secondary School Principals Bulletin
National Association of Student Councils Yearbook
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National Business Education Yearbook
National Council for the Social Studies
National Council of Teachers of Mathematics Yearbook
National Education Association Addresses and Proceedings
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National Merit Scholarship Corporation Research Reports
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Nation's Schools
Nature
Nauka i Religiya
Nauka i Zhizn'
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Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden
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Nervenarzt
Neue Zeitschrift fur Systematische Theologie
Neurologia, Psihiatria, Neurochirurgia
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New Scholasticism
Newsletter of Chaplains and Other Religious Workers Subsection AAMD
Newsletter of the International Union for Child Welfare
Newsletter of the New Jersey Association for Brain Injured Children
Newsletter of the Tennessee Association for Retarded Children and Adults
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Nordisk Psykologi
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North Central Association Quarterly
Northeastern Studies in Vocational Rehabilitation
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Nova et Vetera, France
Nursing Mirror
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Obstetrics and Gynecology
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Pacific Medicine and Surgery
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Peabody Journal of Education
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Proceedings of the Society for Psychical Research
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Programs for the Handicapped
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Project News of the Parsons State Hospital and Training School
Psicologia y Educacion
Psyche, Stuttgart
Psychedelic Review
Psychiatria Clinica
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Psychiatric Quarterly
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Psychologia: An International Journal of Psychology in the Orient
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Psychologische Forschung
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Psychosynthesis Research Foundation
Psychotherapy and Psychosomatics
Psychotherapy: Theory, Research & Practice
Pszichologiai Tanulmanyok
Public Health Reports
Public Health Service Publication
Public Opinion Quarterly
Public Personnel Review
Purdue Opinion Panel Poll Report

Quarterly Journal of Experimental Psychology
Quarterly Journal of Medicine
Quarterly Journal of Speech
Quarterly Journal of Studies on Alcohol

Radiation Research
Radiologia Clinica et Biologica
Radiology
Rajasthan University Studies
Rational Living
Reader's Guide
Reading Research Quarterly
Reading Teacher
Record
Recreation for the Handicapped
Recreation in Treatment Centers
Recreator
Reference Report (Washington State Department of Institutions)
Reformed Review
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Rehabilitation Record
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Report from the Institute of Education, U. Turku
Reports from the Psychological Institute, U. Helsinki
Reports from the Psychological Laboratory, University of Southern California
Reports of the Institute for Science of Labour, Tokyo
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Review and Expositor
Review of Czechoslovak Medicine
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Revue Roumaine des Sciences Sociales: Serie de Psychologie
Ricerca Scientifica
Ridge News, State Home and Training School, Wheat Ridge, Colorado
Rivista Dell'Instuto Seroterapico Italiana
Rivista di Psicologia della Scrittura
Rivista di Psicologia Sociale e Archivio Italiano di Psicologia Generale e del Lavoro
Rocky Mountain Social Science Journal
Royal Society of Medicine, Proceedings
Rural Sociology

SK&F Psychiatric Reporter
Sak'art'velos SSR Mets'nierebat'a Akademiis Moambe
Sbornik Lekarsky
Sbornik Praci Filosoficke' Fakulty Brnenske' University
Scandinavian Journal of Clinical and Laboratory Investigation
Scandinavian Journal of Psychology
Scholastic Coach
School Activities
School and Community
School and Society
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Schoolmen's Week, University of Pennsylvania
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Science
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Semaine des Hopitaux
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Smith College Studies in Social Work
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South African Medical Journal
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Southwestern Journal of Anthropology
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Sovetskaya Meditsina
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Sozial Welt, Germany
Special Education
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TR Times
Tarbiz, Israel
Teachers College Journal
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Teaching and Training
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Technical Bulletin of the Registry of Medical Technologists
Teratology
Texas Medicine
Texas Outlook
Texas Reports on Biology and Medicine
Theology and Life
Theology Today
Theoria: A Swedish Journal of Philosophy
Theory into Practice
Thorax
Tidsskrift for den Norske Laegeforening, Oslo
Tijdschrift voor Geneeskunde, Louvain
Tijdschrift voor Zwakzinnigheid en Zwakzinnigenzorg
Times Educational Supplement, London
Tohoku Journal of Experimental Medicine
Tohoku Psychologica Folia
Traffic Safety Research Review
Training School Bulletin
Traite' de Psychologie Experimentale
Trans-Action
Transactions of the New York Academy of Sciences

Transactions of the Westermarck Society
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Ugeskrift for Laeger, Copenhagen
Union Medicale du Canada
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Vascular Diseases
Vestnik Akademii Meditsinskikh Nauk SSSR
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Vestnik Oftalmologii, Moscow
Vestnik Otorinolaringologii, Moscow
Vestnik Vysshei Shkoly
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Victoria University of Wellington Publications in Psychology
Virginia Journal of Education
Virology
Vocational Guidance Quarterly
Voix Silence
Volta Review
Volunteer Council News (Lynchburg Training School and Hospital)
Voprosy Filosofii
Voprosy Psikhologii
Voprosy Sravnitel'noi Fiziologii Analizatorov
Vox Sanguinis
Vrachebnoe Delo, Kiev

WHO (World Health Organization) Bulletin
WHO (World Health Organization) Chronicle
Warren G. Murray Children's Center (State of Illinois Department of Mental Health)
Washington University Department of Psychology Technical Report
Welfare in Review
Welfare Reporter
Wesleyan Studies in Religion
Wiener Klinische Wochenschrift
Wiener Medizinische Wochenschrift
Wilson Library Bulletin
Winnower
Wisconsin Journal of Education
Works of the Institute of Higher Nervous Activity: Pathophysiological Series
World Year Book of Education

Yale Journal of Biology and Medicine
Young Children

Zeitschrift Evangelische Ethik
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SUBJECT INDEX

The subject index has been compiled on the basis of abstract numbers rather than pagination.

Abbreviations:

b.i.	brain injury, brain injured	inst.	institution, institutionalized
CNS	central nervous system	MR	mentally retarded
CP	cerebral palsy	PMR	profoundly mentally retarded
c/w	compared with	SMR	severely mentally retarded
EMR	educable mentally retarded	spec. ed.	special education
ep.	epilepsy	TMR	trainable mentally retarded
fr.	from	w/	with

* U. S. GOVERNMENT PRINTING OFFICE : 1969 O - 356-453

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